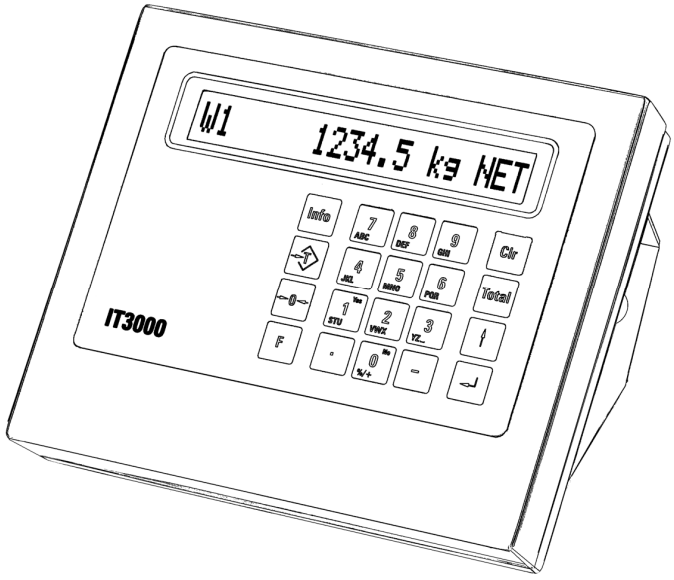
SysTec Systemtechnik und Industrieautomation GmbH

Operation Manual

IT3000A



Industrial Weighing Terminal

February 2012

ST.2309.0723

Rev. 8

Operating Instructions IT3000A

Date: February 17, 2012

File: IT3000A_BAE.DOC

Program Version: 2.74

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Published By:

Please Note:

While every precaution has been taken in the preparation of this manual, SysTec GmbH assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein.

The publisher is grateful for any information and/or advice that may contribute to correct errors or omissions in following editions.

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1 Introduction

The IT3000A is a general purpose weighing terminal for use in a variety of applications such as data logging, data capturing, parts counting, set point control and filling.

1.1 Safety Symbols Used In This Manual

Safety relevant information is shown with corresponding symbols as follows:

W A R N I N G
Failure to observe this precaution could result in serious injuries or fatal accidents. Please make absolutely sure that these precautions are observed in order to ensure safe operation of the equipment.

CAUTION
Failure to observe this precaution could result in damage to or destruction of the equipment or bodily harm! Please make absolutely sure that these precautions are observed in order to ensure safe operation of the equipment.

Note: This indicates an advice for the designated use of the equipment and/or additional information to avoid inappropriate handling.

1.2 Safety Advice

W A R N I N G
Disconnect all power to this instrument before opening the housing! Risk of electrical shock!

W A R N I N G
Exercise utmost care when making checks, tests and adjustments that can actuate movable parts such as feeding devices, gates, flaps, conveyors, etc. Make absolutely sure that nobody is within reach of movable parts.
Failure to observe this precaution could result in bodily injury!

W A R N I N G
This unit must not be operated in a potentially explosive atmosphere!
It is the sole responsibility of the user to classify the area of installation and make sure that absolutely no potentially explosive atmosphere can be present at any time!

W A R N I N G
For the storage of volatile data the terminal contains a battery on the CPU board. Risk of explosion if battery is replaced improperly! Replace only with battery of the same type or with compatible type recommended by manufacturer. Disposal of used batteries only as indicated by manufacturer.

CAUTION
If this device is used in an automatic or manual filling cycle, all users must provide a hard wired emergency stop circuit outside the device circuitry. Failure to observe this precaution could result in bodily injury!

CAUTION
When this unit is included as a component part of a system, the resulting system design must be reviewed by qualified personnel who are familiar with the construction and operation of all individual components in the system and the potential hazards involved. Failure to observe this precaution could result in bodily injury!

CAUTION
This unit must be installed, serviced, and operated in strict compliance with all locally applicable safety regulations and the rules for the prevention of accidents!

CAUTION
The power supply unit provides SELV voltages in accordance with EN 60950. Make sure that any peripheral device connected to the weighing terminal containing its own power supply also uses SELV voltages!

CAUTION
Input voltage of the instrument must comply with local mains supply!

CAUTION
This module and its associated equipment must be installed, adjusted and maintained by qualified personnel only!

CAUTION
If the line cord with connector is used as the means to separate the instrument from the mains, the wall outlet must be installed close to the instrument and must be easily accessible! If a permanently connected mains cable is used, an easily accessible separator must be included in the supply circuit!

Compliance with the following safety instruction is mandatory for UL approved units:

CAUTION
For power supply of the IT3000A-DC use LPS and/or NEC class 2 power supply units only.

Notes:

- The unit does not have a mains switch and is operational immediately after connection to the mains supply!
- Only permit qualified personnel to operate this instrument!
  Disconnect all power to this instrument before cleaning and servicing!
- All switch gear connected to the unit and/or installed close to it, such as relays and contactors, must be fitted with appropriate components (RC-modules, diodes) to suppress interference.
- In order to avoid static discharge, all metallic parts of a system must be thoroughly grounded. Movable parts, such as portable scales on plastic wheels, must be grounded with earth clamps or earth leads of appropriate diameter.
- Keep this manual for future reference!

1.3 Declaration Of Conformity (EU)

SysTec Systemtechnik und Industrieautomation GmbH
Ludwig-Erhard-Str. 6
D-50129 Bergheim-Glessen

CE

Konformitätserklärung
Declaration of conformity
Déclaration de conformité

Die nichtselbsttätige Waage
The non-automatic weighing instrument
L'instrument de pesage à fonctionnement non automatique

III / IIII

Hersteller: *Manufacturer:* Fabricant:	SysTec GmbH
Typ/Modell: *Type/Model:* Type/modèle:	IT3000A
Nr. der EG-Bauartzulassung: *No of the EC type-approval certificate:* N° du certificat d'approbation CE de type:	D07-09-023

entspricht dem in der Bescheinigung über die Bauartzulassung beschriebenen Baumuster sowie den Anforderungen der folgenden Richtlinien:
Corresponds to the production model described in the EC type-approval certificate and to the requirements of the following EC directives:
Correspond au modèle décrit dans le certificat d'approbation CE de type, aux exigences des directives CE suivantes:

2009/23/EG	***2009/23/EC***	2009/23/CE
2004/108/EG	***2004/108/EC***	2004/108/CE
2006/95/EG	***2006/95/EC***	2006/95/CE

entsprechend den folgenden Normen/Empfehlungen:
in conformity with the following standards:
conforme aux normes suivantes:

EN 45501	OIML R76-1	
EN 61000-6-2	EN 61000-6-3	NAMUR NE21
EN 60950		

Nur gültig mit einer von einer Benannten Stelle erteilten Konformitätsbescheinigung.
Only valid with a Certificate of Conformity issued by a Notified Body.
Seulement valable avec une Attestation de Conformité délivré par une organisme notifié.

Unterschrift		**Datum:**	**15.02.2012**
Signature		*Date:*	*February 15, 2012*
Signature		Date:	15.02.2012

Dipl.-Ing. Rainer Junglas
Geschäftsführer / *General Manager* / Directeur

1.4 Declaration Of Conformity (US)

SysTec Systemtechnik und Industrieautomation GmbH
Ludwig-Erhard-Str. 6
D-50129 Bergheim-Glessen

The non-automatic weighing instrument, type	IT3000A–AC IT3000A–DC
Manufacturer	SysTec GmbH
No. of NTEP type approval certificate	NTEP CC No. 08-006 III / III L
No. of Canada (NOA) notice of approval	AM-5669 III / III HD

3162737

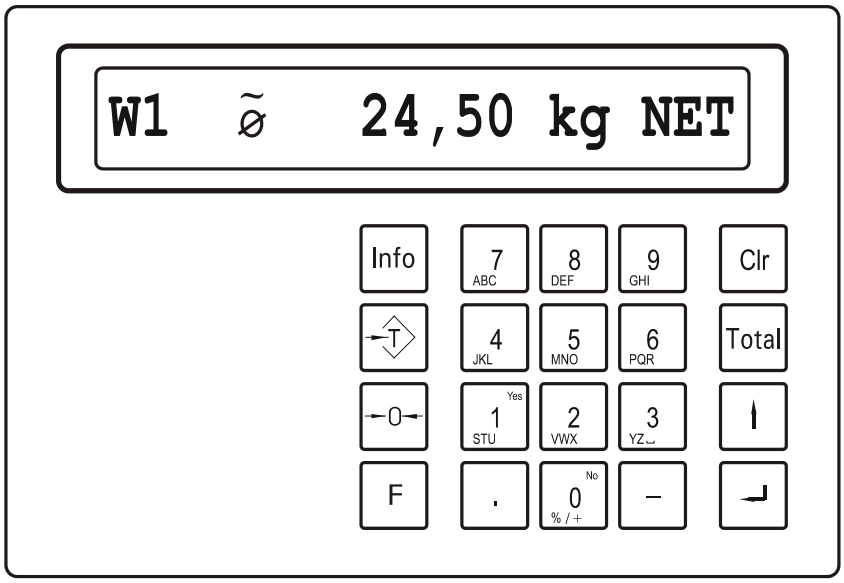
Conforms to UL STD 60950–1
Certified to CAN/CSA STD C22.2 No. 60950–1

Conforms to the requirements of the following standards and specifications:

NIST Handbook 44, 2007 Edition, NCWM Publication 14, 2007 Edition

FCC 47 CFR Ch. 1 Part 15 2007-09-20
Section 15.107 (a), limits same as IEC/CISPR 22:1997 (EN 55022:1998) Class B
Section 15.109 (a) Class B, and/or
Section 15.109 (g), i.e. IEC/CISPR 22:1997 (EN 55022:1998) Class B

2 Display And Keyboard



Display line:		Gross or net weight or operator prompt and entry
	⌀	Symbol: Scale in gross zero range (±0.2d)
	~	Symbol: Scale in motion
Info and scale keys:	**Info**	Scrolling forward, call up Service Mode in the initial step
	→T←	Taring (Autotare), if scale is tared: clear tare
	→0←	Set gross weight to zero
Function keys:	**F1 – F8**	Press F-key and numeric key (1 - 8) subsequently to access function defined in application program (see below);
	F1 - F2	Switching scale 1 <-> scale 2 when two scales are installed (in the steps defined in the application program);
	F7	Switch off backlighting of display;
	F8	Abort / access to Supervisor Mode;
	F0	Switch weight display to tenfold resolution (in the basic step of the sequence), display falls back to normal mode after approx. 5 sec.
Special keys	**Clr**	Numeric entry: press key once → clear entry Alphanumeric entry: short key stroke → clear last character (can be repeated several times to clear more than one character); hold key down for approx. 1 sec → clear the whole entry
	↑	Return to previous program step
	↵	Confirm entry, continue with next program step
	Total	Display / print totals (if defined in the operating sequence and the printout)
Numeric keypad:		Entry of numeric data, confirmation 'Yes' (=1) - 'No' (=0) and entry of alpha characters via multiple key assignment

2.1 Multiple Assignment Of Numeric Keypad

Where applicable in the application program, an alphanumeric entry is made by selecting the respective character with a sequence of short keystrokes. If a key is pressed repeatedly within a period of approx. 0.5 seconds, the display shows the other characters also assigned to this key one after the other.

Example:

Key pressed:	5	5	5	5	5	5	5	5	
Display:	5	M	N	O	m	n	o	5	etc.

To enter the letter 'n' the key 5 must be pressed six times until 'n' appears on the display. If the entry is paused for longer than 0.5 sec, the cursor moves on to the next character. If any other key is pressed, entry continues in the position of the next character immediately.

An incorrect entry can either be corrected by deleting the last character (short key stroke on Clr-key) or by clearing the complete entry (Clr-key pressed for longer than 0.5 sec). By pressing the Clr-key repeatedly, it is possible to delete several characters one after the other.

3 Operating The Weighing Terminal

In principal, the weighing terminal can be used for a variety of applications in the sectors data capturing and logging, checkweighing, filling, etc. For these applications several operating modes are integrated that are described in the following chapters. However, the individual steps of the operating sequence are configured for every specific application during installation and commissioning, and are documented separately by your supplier / service partner if they exceed the scope of this manual. If a printer is connected, that also applies to the print layout which is only defined with the configuration of the terminal.

3.1 Operator Prompting

The following sections describe the operating sequence of the weighing terminal with operator prompts and the requested entries.

The contents of the terminal display is shown in a frame on the left hand side. Next to the display the possible operator entries are listed, on the right hand side comments and explanations are shown.

`Password ????`		Entry of 4-character password
	↑	Return to normal operation

Prompts or entries that apply only under certain conditions are shown in an extra frame. The condition is shown in bold face in the upper left hand corner of the frame.

PC not ready:

`PC Not Ready !`	Error message: PC is not ready for data transmission

This message is only displayed when an error occurs.

↵ -key (Enter) and ↑-key

In all program steps, unless otherwise specified, the ↵ -key (Enter) leads to the next step. Pressing the ↑ -key leads to the previous step.

3.2 Power Up

After switching the terminal on, several program messages are displayed.
After that the program proceeds to the initial step.

`Version 9.99 999999`	Version-No. and version date
`03.09.01 10:41`	Date and time
`Application: Count`	Currently selected operating mode
`W1 ø 00.00 kg`	Initial step / display of gross weight

3.3 Weighing Functions

The initial step for all operating modes is the display of the weight. In this step the elementary scale functions are accessible.

`W1 25.60 kg`	Display of gross weight For multiple-range scales the valid range (e.g. 1.2) is shown on the left hand side, for scales with only one range always W1 or W2, respectively, is indicated.
→0←	Set gross weight to zero (only within range for pushbutton zero)
F8	Call up Supervisor Mode

Setting in Service Mode 'Wgt.Disp.: With Tare':

`1 25.60kg 0.00`	Display of gross weight when scale is not tared;
`1 15.40kgNET 10.20`	or display of net and tare weight when scale is tared.

Only when two scales are installed:

`W1 15.40 kg NET`	Show gross or net weight of scale #1
F2	Switch over to display of scale #2
`W2 100.20 kg`	Show gross weight of scale #2
F1	Return to display of scale #1
`W1 25.60 kg`	Show gross weight of scale #1 (tare is cleared)

Show weight with tenfold resolution

`W1 25.60 kg`	Display of gross weight
F0	Show weight with tenfold resolution
`X10 25.604 kg`	Weight display with tenfold resolution Display is switched back after 5 sec

Set gross weight to zero

W1 0.02 kg

Display of gross weight

→0← Set gross weight to zero (only within range for pushbutton zero)

W1 Ø 0.00 kg

Gross weight set to zero

Auotare

W1 25.60 kg

Display of gross weight

 Autotare: Press Tare-key to tare scale.

W1 0 kg NET

 Clear tare, return to display of gross weight.

W1 25.60 kg

Manual tare

W1 25.60 kg

0...9 Manual tare: After pressing a numeric key, entry of manual tare is enabled,

Tare Input __10.20

↵ after entry of a complete tare weight and pressing the Enter-key the net weight is displayed.

W1 15.40 kg NET

Info Press Info-key to display tare weight.

10.20 kg TAR

Tare weight when scale was autotared

or

10.20 kg PT

Tare weight when scale was manually tared

Info Zurück zur Anzeige des Nettogewichtes

W1 15.40 kg NET

 Return to display of net weight.

Please note: In the operating mode 'TRUCK' the tare function is disabled.

Print and totalize:

W1 25.60 kg

↵ Release printing and totalizing at the end of a weighing cycle

P1 25.60 kg

P1 appears on the display instead of W1 during printout and data transmission and also while waiting on a settled weight after releasing a printout.

3.3.1 Tare Memory

Entry of tare value into tare memory:

W1 25.60 kg

Info Press Info-key in the initial step of the sequence to display tare weight.

0 kg TAR

Example: tare is not yet tared.

↵ Continue with entry of tare weights into tare memory (for each scale up to 9 tare values can be stored).

Memory 1 10.00

Display of first tare value.

Clr Clear value and enter new one via keyboard.

Memory 1 12.00

↵ Continue with next tare value,

Memory 2 4.00

after the ninth value return to display of weight.

Recall of tare value from tare memory:

W1 25.60 kg

Initial step of sequence with display of gross weight.

– 9 Recall tare value by entry of hyphen (–) and subsequently number of tare memory (1 - 9).

S1 12.00 kg PT

Display of chosen tare value for approx. 1 sec,

W1 13.60 kg NET

after that display of net weight.

Info By pressing the Info-key the tare weight can be checked.

12.00 kg PT

3.4 Tare Functions

In the Service Mode, Group 'General' one of 3 different tare modes can be chosen.

3.4.1 Set / Clear Tare

Setting: 'Taremode:Gross/Net': With each actuation of the tare key the display is switched from gross to net and back. This is the usual tare function which is appropriate for most applications. The description of the operating mode 'BASIC' is based on this setting.

W1 25.60 kg	 Autotare: Press Tare-key to autotare scale.
W1 0 kg NET	 Clear tare and return to display of gross weight.
W1 25.60 kg	

3.4.2 Autoclear Tare

Setting 'Taremode:Auto Clear': The loaded scale can be tared only once, and the net display is automatically switched back to gross when the scale returns to the zero range.

This function must be activated by the operator by pressing the F1 key in the basic step of the sequence, it is useful for serial weighings with changing tare weight.

W1 25.60 kg	Display of gross weight
	F1
Auto Clear Tare On	Display for approx. 1 sec, autoclear is now activated.

The autoclear function can be disabled by pressing the F1 key again, then the scale can only be tared once and the tare weight remains stored until F1 is pressed to again enable autoclear. This function is useful for serial weighings with identical tare weight. After power up autoclear is disabled.

W1 25.60 kg	Display of gross weight
	F1
Auto Clear Tare Off	Display for approx. 1 sec, autoclear is now deactivated.

3.4.3 Repetitive Tare

Setting 'Taremode: Net = 0': With each actuation of the tare key the scale is tared anew. The net display is automatically switched back to gross when the scale returns to the zero range.

3.5 Powersave Function

By means of the selectable powersave function, backlighting can be switched off after time when the the terminal is not in use. This function must be enabled in the configuration of the terminal, and it is done by entering a time in minutes after which the backlighting of the display is switched off when the terminal is in standby mode only (powersave for battery operated terminals).

Press any key to switch on again.

4 Supervisor Mode (Entry Of Date And Time)

From the first step of the application program (weight display) the Supervisor Mode can be called up with the F8-key.

W1 15.00kg NET		Example for weight display in initial step.
	F8	Call up entries (Supervisor Mode)

Password specified for Supervisor Mode:

Password ????		Enter password for Supervisor Mode
Sel: Parameters	**Info**	Scroll list
Date 04.09.01		Enter date
Time 17:15		Enter time

All operating modes except 'ONLINE':

Ticket-No. 99999		Enter / edit ticket-No. for printout
Consec.-No. 9999		Enter / edit consecutive-No. for printout

All operating modes except 'FILL 2':

1st Setpoint _____		Enter setpoint S1 (function depending on chosen operating mode): • BASIC: Threshold S1, either for parallel output or automatic printing after scale has settled • COUNT: Threshold S1 for automatic taring, only when 'AutoTare (G > S1) = Y' is set in Service Mode • TRUCK: Threshold S1 for traffic light • CHECK: Minus tolerance • FILL 1: Cutoff filling fast
2nd Setpoint _____		Enter setpoint S2 (function depending on chosen operating mode): • BASIC: Threshold S2 for parallel output • COUNT: Threshold S2 for parallel output • TRUCK: *not applicable* • CHECK: Plus tolerance • FILL 1: Cutoff filling slow
With Printer? N		Enable / disable printer
	Info or 0 / 1	N Without printer Y With printer

All operating modes except 'ONLINE':

`Transmission? N`

Enable / disable data transmission

Info or 0 / 1

- N Without data transmission
- Y With data transmission

Cont.Out: 'Com1 Sys' or 'Com1 SysR' selected:

`Remote Displ.: Net`

Transmit net or gross weight to remote display

Operating mode 'COUNT' or 'BASIC/COUNT' selected:

`Ser.Mode 1`

Enable / disable serial mode in operating mode 'COUNT'

Info or 0 / 1

- Y Serial mode on (average piece weight is stored for the next counting cycle).
- N Serial mode off (average piece weight is cleared and must be determined for each counting cycle).

Operating mode 'FILL 1' or 'FILL 2' selected:

`FMode(T=0/Z=1/F=2) 9`

Select tare / zero setting function that is to be carried out prior to a filling cycle

- **0** Taring: Scale is tared prior to every cycle
- **1** Zero setting: Scale is set to zero prior to every cycle
- **2** Finish filling: Filling is started without taring or zero setting (eg to finish a partial filling)

Operating mode 'FILL 2' selected:

`Preact Corr.? N`

Info or 0 / 1

- Y Preact correction enabled
- N Preact correction disabled

`0-Range 9999999`

Enter zero range for automatic continuation after completed filling cycle and unloading of scale.

`Min.Tare 9999999`

Enter minimum tare for tare check

`Max.Tare 9999999`

Enter maximum tare for tare check, enter '0' to disable tare check.

When FMode = 1 (zero setting) is selected, tare check must be disabled (Max.Tare = 0).

Operating mode 'FILL 1' or 'FILL 2' selected:

`Start via Keyb.? Y`

Enable / disable start of filling cycle via keyboard.

`Password 9999`

Enter password for access to Supervisor Mode, if no password is specified, Supervisor Mode can be called up without password check.

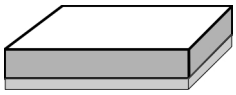
`Sel: Parameters`

↑ Return to basic step

5 Operating Mode 'BASIC' (Weigh & Print)

In operating mode *'BASIC'* the weighing terminal works as a simple scale with weigh & print function.

5.1 Weighing With Container



W1 0.2 kg	
W1 ø 0.0 kg	Set scale to zero
W1 8.0 kg	Place box on scale
W1 0.0 kg NET	Tare scale (NET indicates net mode)
W1 13.0 kg NET	Put first item into box

If input fields are defined in header section:

Article-No. 111	In this example an input field 'Article-No' is defined for printout / data transmission.

If input fields are defined in the cyclic part:

Operator-No. 222	In this example an input field 'Operator-No' is defined for printout/ data transmission.
P1 13.0 kg NET	Release printing / data transmission for first weight
W1 21.0 kg	Set scale to gross weight for next taring

5.1.1 Weigh Next Item

W1 0.0 kg NET	Tare scale
W1 13.0 kg NET	Put second item into box

If input fields are defined in the cyclic part:

Operator-No. 222	In this example an input field 'Operator-No' is defined for printout / data transmission.

↵	P1 13.0 kg NET	Release printing / data transmission

Weigh next item

5.1.2 Calculate Totals And Terminate Weighing Cycle

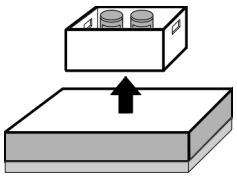
Total	Tot. 4 52.0kg	Totalizing: Show number of items and total net weight

Clear memory or return:

↵	Delete...	Clear totals. Print totals (only if print field is defined in totals section).
or:		
Total	13.2 kg NET	Return to basic step without clearing totals.

If input fields are defined in the totals part:

↵	Batch-No. 333	In this example an input field 'Batch-No' is defined for printout.



-34.0 kg

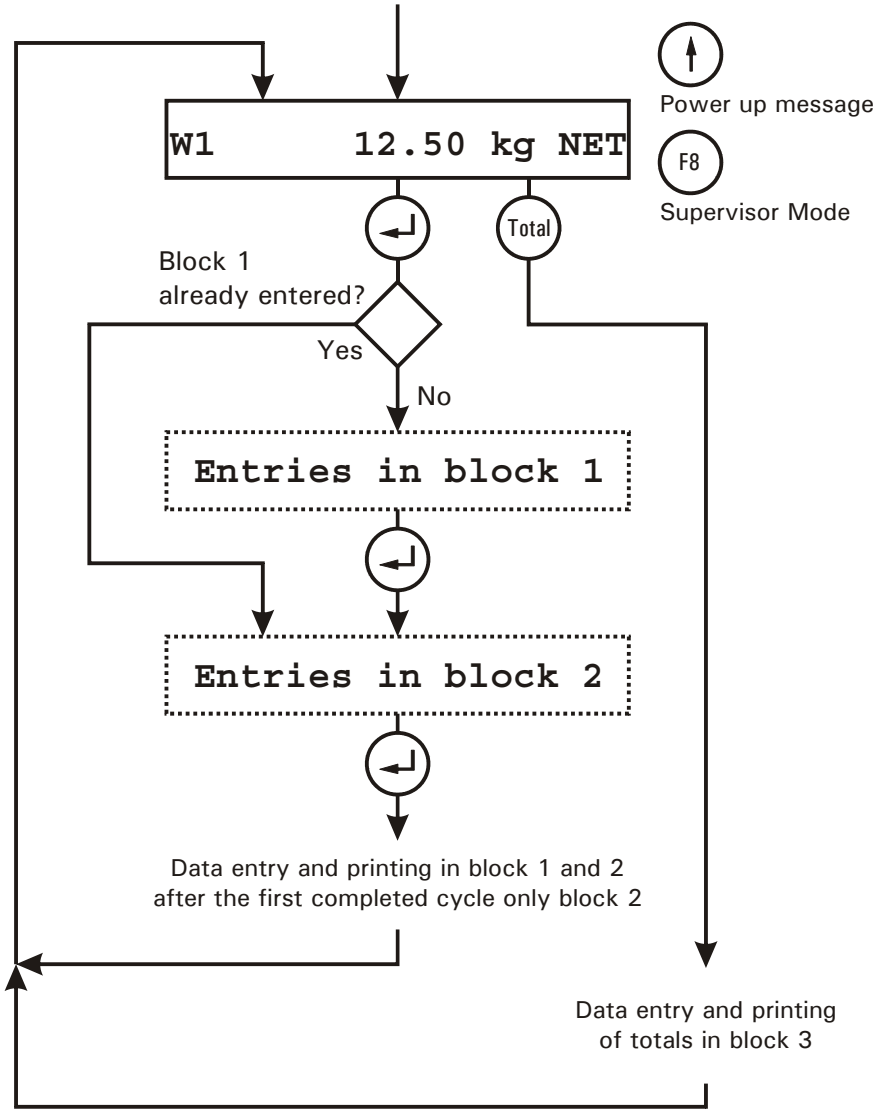
Remove filled box from scale.

Next weighing cycle

5.1.3 Parameter Settings / Notes

- Press **Info -key** to display the current tare weight.
  The display shows -for example- ' `8.0kg TAR`' .
- If the tare weight of the container is known, this weight can be entered manually in the first step of the sequence. By pressing a numeric key, the prompt to enter the tare '`Tare Input 8.00`' is displayed. After entering the tare weight it is confirmed with the Enter-key.
- Printout or data transmission is only possible when:
  - Printer **or** data transmission is enabled in Supervisor Mode.
  - A print format is configured. Contact your supplier for further details.
- If the parameter 'AutoPrint' is set to '1', printing is released automatically after placing the weight on the scale and reaching a settled weight. Contact your supplier for further details.
- Press function key F1 or F2, respectively, to select displayed scale.
- Depending on parameter 'Taremode:Gross/Net' the function of the tare key changes:
  - **Gross/Net** with each actuation of the tare key the display changes from gross to net and back;
  - **Auto Clear** the tare is automatically cleared when the scale returns to the zero range;
  - **Net = 0** every time the tare key is pressed, the scale is tared anew, when the weight returns to the zero range, the tare is cleared and the display is set to gross mode.

5.1.4 Principal Program Structure Of Operating Mode 'BASIC'



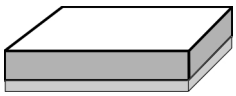
6 Operating Mode 'COUNT' (Parts Counting)

Operating mode 'COUNT' permits the counting of an unknown number of pieces with identical piece weight, based on weighing a specified number of reference parts and the comparison of their weight with the unknown quantity.

6.1 Counting Into An Empty Container

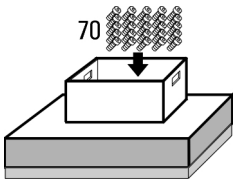
For this description it is assumed that serial weighing mode is enabled.
(Service Mode setting 'Ser.Mode? = 1'.)

6.1.1 Weigh Reference Parts



W1 0.2 kg	
W1 ⌀ 0.0 kg	Set scale to zero.
W1 8.0 kg	Place empty container on scale.
W1 0.0 kg NET	Tare scale (NET indicates net mode).
W1 10 Parts weighin	Number of reference parts is displayed.
W1 10 Parts weighin	Put 10 parts (reference parts) into container.
W1 Pc.Wgt(g) 100.0	Average piece weight of reference parts is displayed.
W1 Parts 10	Number of parts is displayed

6.1.2 Count Pieces



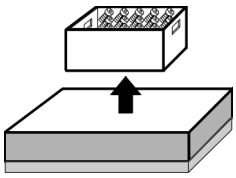
W1 Parts 80	Add parts for counting unknown quantity or to reach desired number. Example: Add further parts (70 in this case in addition tp the 10 reference parts) to reach 80.
P1 Parts 80	Printing / data transmission of piece count.

If input fields are defined in header section:

Article-No. 111	In this example an input field 'Article-No' is defined for printout / data transmission.

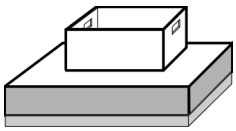
If input fields are defined in the cyclic part:

Operator-No. 222	In this example an input field 'Operator-No' is defined for printout/ data transmission.



W1 Parts 0	Remove filled container from scale, empty out and place on scale again.

6.1.3 Count Further Pieces



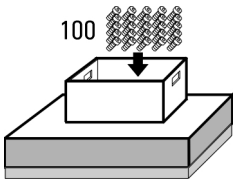
W1 Parts 0	Empty container on scale

If serial mode is disabled in Supervisor Mode ('Ser.Mode' = 0):

W1 10 Parts weighin	Number of reference parts is displayed.

W1 Pc.Wgt(g) 100.0	Average piece weight of reference parts is displayed.

W1 Parts 0	

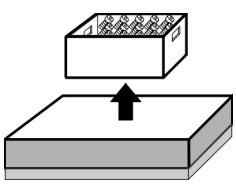


W1 Parts 100	Fill parts into container until desired number is reached.

P1 Parts 100	Release printing / data transmission

If input fields are defined in the cyclic part:

Operator-No. 222	In this example an input field 'Operator-No' is defined for printout/ data transmission.



W1 Parts 0	Remove filled container from scale, empty out and place on scale again.

6.1.4 Calculate Totals And Terminate Weighing Cycle

Total	Tot. 2 180Pc	Totalizing: Show number of weighings and total piece count.

Clear memory or return:

↵	Delete...	Clear totals. Print totals (only if print field is defined in totals section).
or:		
Total	W1 Parts 180	Return to basic step without clearing totals.

If input fields are defined in the totals part:

↵	Batch-No. 333	In this example an input field 'Batch-No' is defined for printout.
	W1 Parts 0	**Next batch**

6.1.5 Change Number Of Reference Parts

In the sequence described above, 10 reference parts are used for counting. This number may be changed as required:

	W1 10 Parts weighin	Change number of reference parts only in this step of the sequence.
2 vwx and 0 %/+	W1 20 Parts weighin	Change number of reference parts.
↵	W1 Pc.Wgt(g) 100.0	Confirm and continue.

If piece weight is known or manually weighed:

	W1 10 Parts weighin	Changes possible only in this step of the sequence.
Info	Pc.Wgt(g) 100.0	Change piece weight.
↵	W1 Parts 10	

- Notes: See at the end of this chapter.

6.1.6 Store Reference Weights

Up to 9 different reference weights can be stored.

	W2 Pc.Wgt(g) 100.0	Display of weighed or manually entered piece weight.
–	S_	Enter number of memory (1–9).

↵	S1 100.0 g	Display of memory-No. and pertaining piece weight.
↵	W1 Pc.Wgt(g) 100.0	Return to basic step.

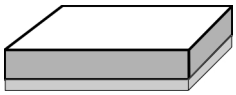
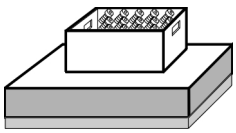
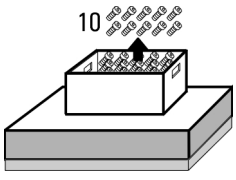
6.1.7 Look Up Reference Weights

	W1 Parts 10	Basic step of sequence.
– and 1 STU	S1 100.0 g	Press –key and number of desired memory, e.g. 1. The selected memory and the pertaining reference weight is briefly displayed,
	W1 Parts 10	and the display returns to the basic step.

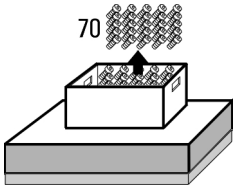
6.2 Counting Out Of A Filled Container

6.2.1 Weigh Reference Parts

Note: For counting out of a filled container, the serial weighing mode must be enabled (Supervisor Mode setting 'Ser.Mode? = 1').

	W1 0.2 kg	
→0←	W1 ø 0.0 kg	Set scale to zero
	W1 108.0 kg	Place filled container on scale
→T←	W1 0.0 kg NET	Tare scale (NET indicates net mode)
↵	W1 10 Parts weighin	Number of reference parts is displayed.
	W1 10 Parts weighin	Take 10 pieces (reference parts) out of container.
↵	W1 Pc.Wgt(g) 100.0	Average piece weight of reference parts is displayed.
↵	W1 Parts 10	Number of reference parts taken out of container is displayed.

6.2.2 Count Pieces



	W1 Parts 80	Remove parts for counting unknown quantity. Example: Remove further parts (70 in this case in addition to the 10 reference parts) to reach 80.
↵	P1 Parts 80	Printing / data transmission of piece count.

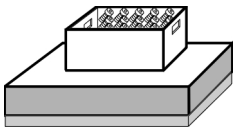
If input fields are defined in header section:

↵	Article-No. 111	In this example an input field 'Article-No' is defined for printout / data transmission.

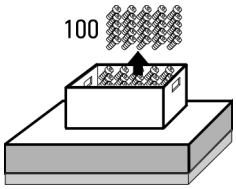
If input fields are defined in the cyclic part:

↵	Operator-No. 222	In this example an input field 'Operator-No' is defined for printout/ data transmission.
↵	W1 Parts 80	

6.2.3 Count Further Pieces



	W1 Parts 80	Partially filled container is still on scale.
→T	W1 Parts 175	Set scale to gross weight (clear tare).
→T	W1 Parts 0	Tare scale.



	W1 Parts 100	Take parts out of container until desired number is reached.
↵	P1 Parts 100	Release printing / data transmission.

If input fields are defined in the cyclic part:

↵	Operator-No. 222	In this example an input field 'Operator-No' is defined for printout/ data transmission.

Remove further pieces from container or take container off scale.

6.2.4 Calculate Totals And Terminate Weighing Cycle

Total	Tot. 2 180Pc	Totalizing: Show number of weighings and total piece count.

Clear memory or return:

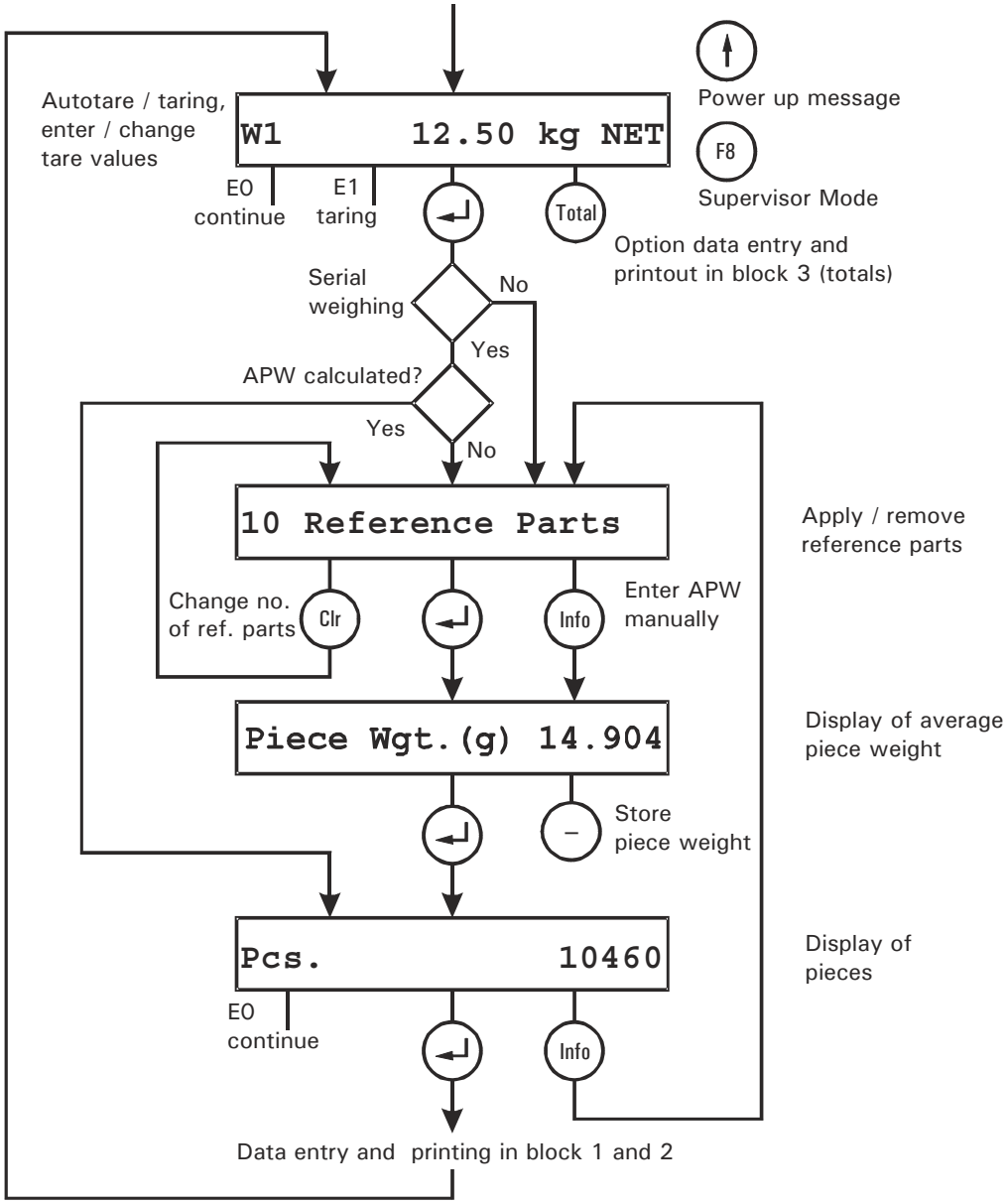
↵	Delete...	Clear totals. Print totals (only if print field is defined in totals section).
or:		
Total	W1 Parts 180	Return to basic step without clearing totals.

If input fields are defined in the totals part:

↵	Batch-No. 333	In this example an input field 'Batch-No' is defined for printout.
	W1 Parts 180	**Next batch**

- Changing / storing the number of reference parts: See at the beginning of this chapter.
- Notes: See at the end of this chapter.

6.2.5 Principal Program Structure Of Operating Mode 'COUNT'

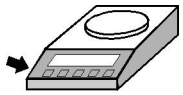


6.3 Counting With Additional Reference Scale

For parts counting with additional reference scale it is helpful to enable serial weighing mode (setting in Supervisor Mode 'Ser.Mode? = 1').

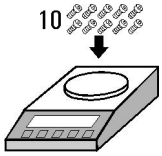
6.3.1 Weigh Reference Parts

Only with scale W2 serially connected:

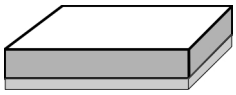
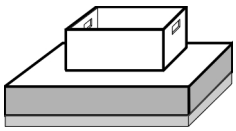
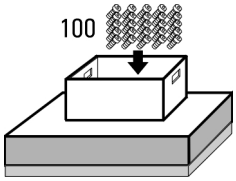


W2 ø 0.0 kg	Set reference scale manually to zero.

Only with scale W2 connected via internal DUAL-ADM:

F and 2 VWX	W2 0.2 kg	Select scale W2 (reference scale).
→0←	W2 ø 0.0 kg	Set scale to zero.
↵	W2 10 Parts weighin	Number of reference parts is displayed.
	W2 10 Parts weighin	Put 10 parts (reference parts) into container on scale W2.
↵	W2 Pc.Wgt(g) 100.0	Average piece weight of reference parts is displayed.
↵	W1 Parts 0	Display changes over to scale W1.

6.3.2 Count Pieces

	W1 Parts 1	
→0←	W1 Parts 0	Set scale to zero.
	W1 Parts 8	Place empty container on scale W1.
→T←	W1 Parts 0	Tare scale (NET indicates net mode).
	W1 Parts 100	Fill parts into container on scale W1 for counting, example: 100

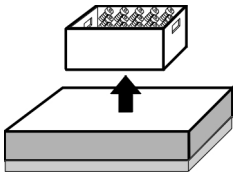
P1 Parts 100	Printing / data transmission of piece count.

If input fields are defined in header section:

Article-No. 111	In this example an input field 'Article-No' is defined for printout / data transmission.

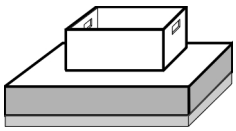
If input fields are defined in the cyclic part:

Operator-No. 222	In this example an input field 'Operator-No' is defined for printout/ data transmission.

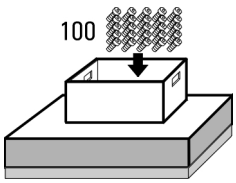


W1 Parts 0	Remove filled container from scale, empty out and place on scale again.

6.3.3 Count Further Pieces



W1 Parts 0	Empty container on scale

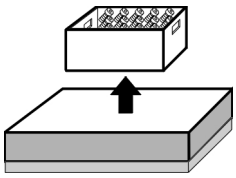


W1 Parts 100	Fill parts into container on scale for counting, example: 100.

P1 10.0 kg NET	Printing / data transmission of piece count.

If input fields are defined in the cyclic part:

Operator-No. 222	In this example an input field 'Operator-No' is defined for printout/ data transmission.



W1 Parts 0	Remove filled container from scale, empty out and place on scale again.

6.3.4 Calculate Totals And Terminate Weighing Cycle

Clear memory or return:

↵	Delete...	Clear totals. Print totals (only if print field is defined in totals section).
or:		
Total	W1 Parts 200	Return to basic step without clearing totals.

If input fields are defined in the totals part:

↵	Batch-No. 333	In this example an input field 'Batch-No' is defined for printout.
	W1 Parts 200	**Next batch**

- For changing / storing the number of reference parts: See at the beginning of this chapter.

6.3.5 Change Reference Scale

In the step of the sequence shown below the reference scale can be changed:

	W2 10 Parts weighin	Change possible only in this step of the sequence.
F and 1 STU (Yes)	W1 10 Parts weighin	Scale W1 as reference scale
F and 2 VWX	W2 10 Parts weighin	Scale W2 as reference scale

6.3.6 Change Counting Scale

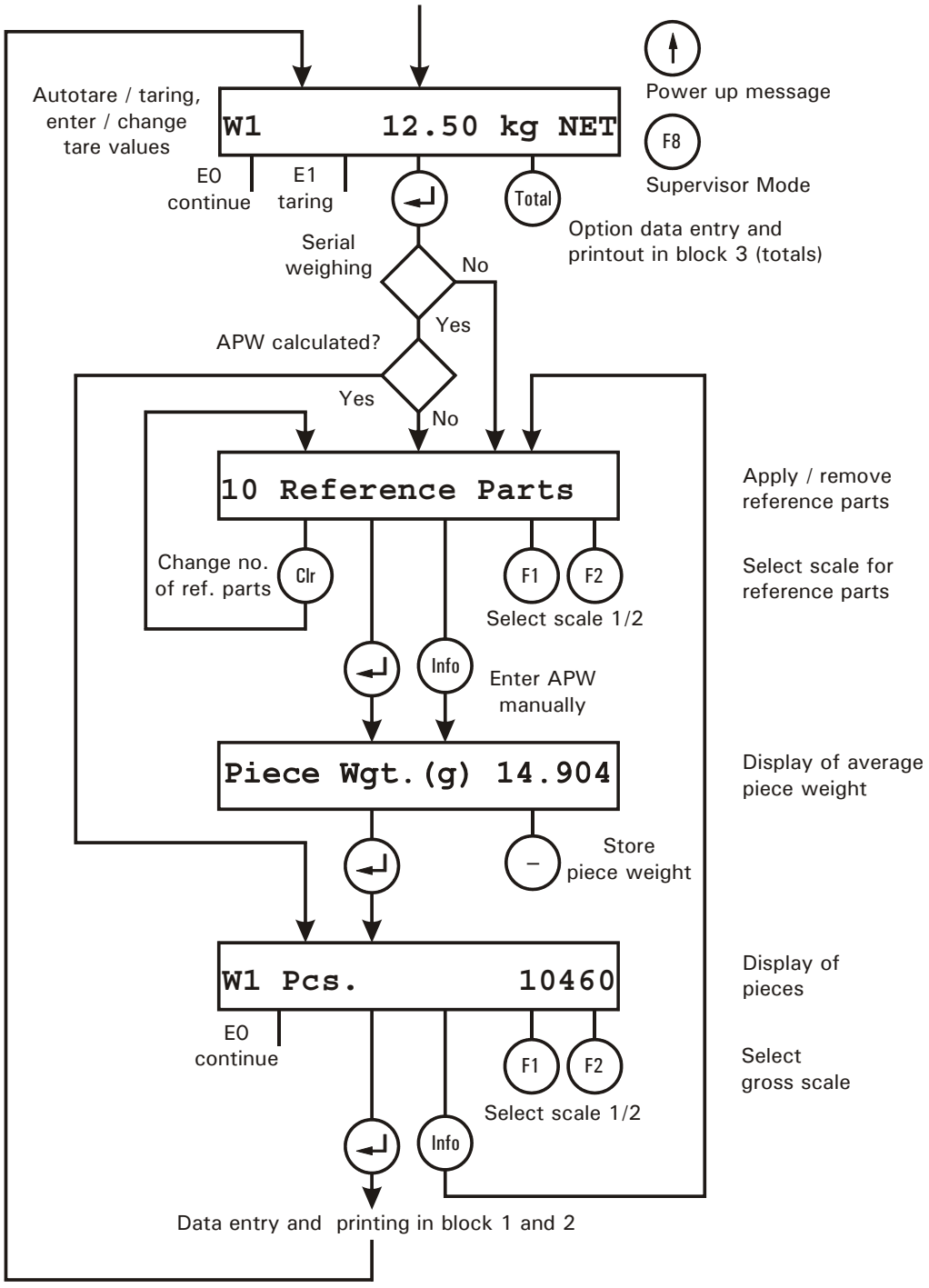
In the step of the sequence shown below the counting scale can be changed:

	W1 Parts 0	Change possible only in this step of the sequence.
F and 1 STU (Yes)	W1 Parts 0	Scale W1 as counting scale
F and 2 VWX	W2 Parts 0	Scale W2 as counting scale

6.3.7 Parameter Settings / Notes

- If the reference scale is not operational, the counting scale can also be used as reference scale by assigning scale-No. W1 to both functions.
- If a different reference weight (different part) is to be weighed, the running weighing cycle must be terminated with the ↑ **-key**. If the result of following parts counting cycle is not to be added to the totals, the totals memory must be cleared first.
- If the tare weight of the container is known, it can be entered manually in the first step of the sequence. After pressing any numeric key, the prompt '`Tare Input _____`' is shown, and the weight can be entered and confirmed with the Enter-key.
- In the Supervisor Mode a value for '`1st Setpoint`' can be entered as threshold for automatic taring after exceeding this value, only when parameter '`AutoTare(G > S1)=Y`' is set in Service Mode.
- With the Supervisor Mode parameter '`Ser.Mode = 1`' serial weighing can be enabled. The average piece weight is then stored for the next weighing cycle and capturing of the piece weight is skipped.
- Output of piece count and weights on printer or host system is only possible when:
  - printer **or** data transmission is enabled;
  - a print format is configured. Contact your supplier for details.
- Taring or zero setting of a serially connected reference scale is not possible from the weighing terminal.
- Depending on parameter 'Taremode:Gross/Net' the function of the tare key changes:
  - **Gross/Net** with each actuation of the tare key the display changes from gross to net and back;
  - **Auto Clear** the tare is automatically cleared when the scale returns to the zero range;
  - **Net = 0** every time the tare key is pressed, the scale is tared anew, when the weight returns to the zero range, the tare is cleared and the display is set to gross mode.

6.3.8 Principal Program Structure Of Operating Mode 'COUNT' With Additional Reference Scale



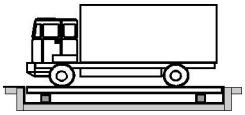
7 Operating Mode 'TRUCK' (Vehicle Weighing)

The operating mode 'TRUCK' covers a typical truck scale application with first and second weighing and calculation of the difference.

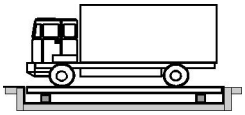
7.1 Weighing With First Weight Printing

When the Service Mode parameter '1st Weight Ticket = Y' is set, access to the stored first weight is made during the second weighing via a 2-digit ID that is automatically assigned by the program and printed on the first weight ticket.

7.1.1 First Weighing

	W1 0.02 t	
	W1 ø 0.00 t	Set scale to zero.
	W1 6.50 t	Drive truck onto scale.
	1st W.=1 / 2nd W.=2	Press 1 for first weighing.

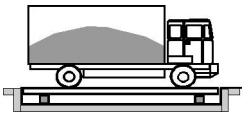
If a corresponding input field is defined

	Veh.Reg.No BM-SY 123	Enter vehicle registration-No.
	P1 6.50 t	Print first weight ticket.

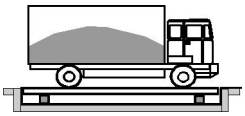
Note: On the ticket the first weight ID is printed. The first weight is stored against this ID.

	Ready 6.50 t	Drive truck off scale.
	W1 ø 0.00 t	Basic step

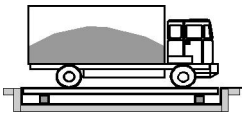
7.1.2 Second Weighing

	W1 0.02 t	
	W1 ⌀ 0.00 t	Set scale to zero.
	W1 7.60 t	Drive truck onto scale.

Insert ticket of first weighing for this truck into printer. Memorize the ID printed on this ticket (inbound code).

	1st W.=1 / 2nd W.=2	Press 2 for second weighing. **Note**: Press Info-key to look up first weights.
	Inbound Code 12	Enter ID of first weighing.
	First Weight 7.60	First weight is looked up and shown for verification.

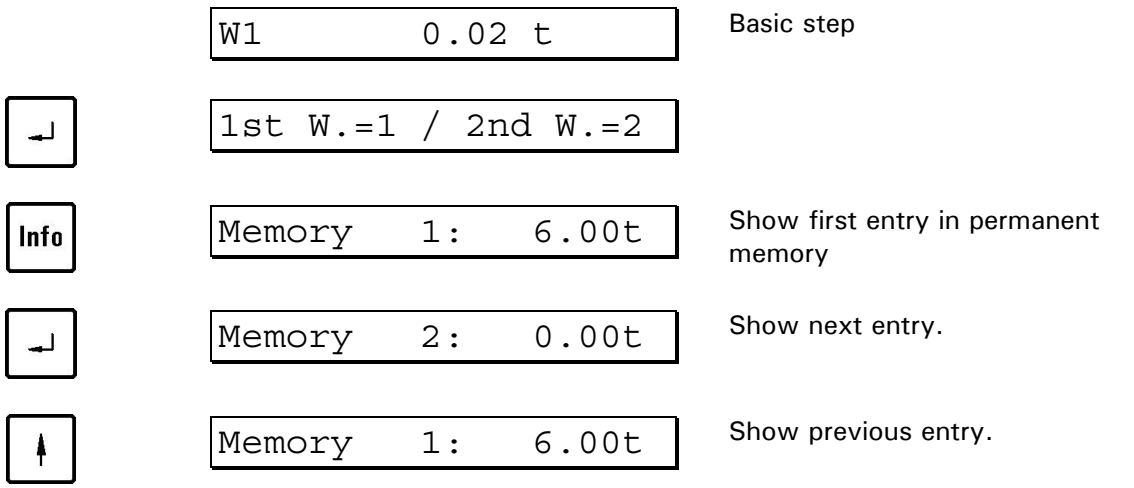
If a corresponding input field is defined

	Veh.Reg.No BM-SY 123	Enter vehicle registration-No.
	P1 7.60 t	Ticket is printed with data of second weighing.
	Ready 7.60 t	Drive truck off scale.
	W1 ⌀ 0.00 t	Basic step

Note: After printing the second weight, the corresponding first weight is deleted.

7.1.3 Permanent Memory

For weighing of trucks with known tare weights, these weights can be captured / edited and stored permanently. This function is only available when appropriate memory space is reserved with the Service Mode parameter 'No. Fix Storages' = 1, (1 or greater).



Functions:

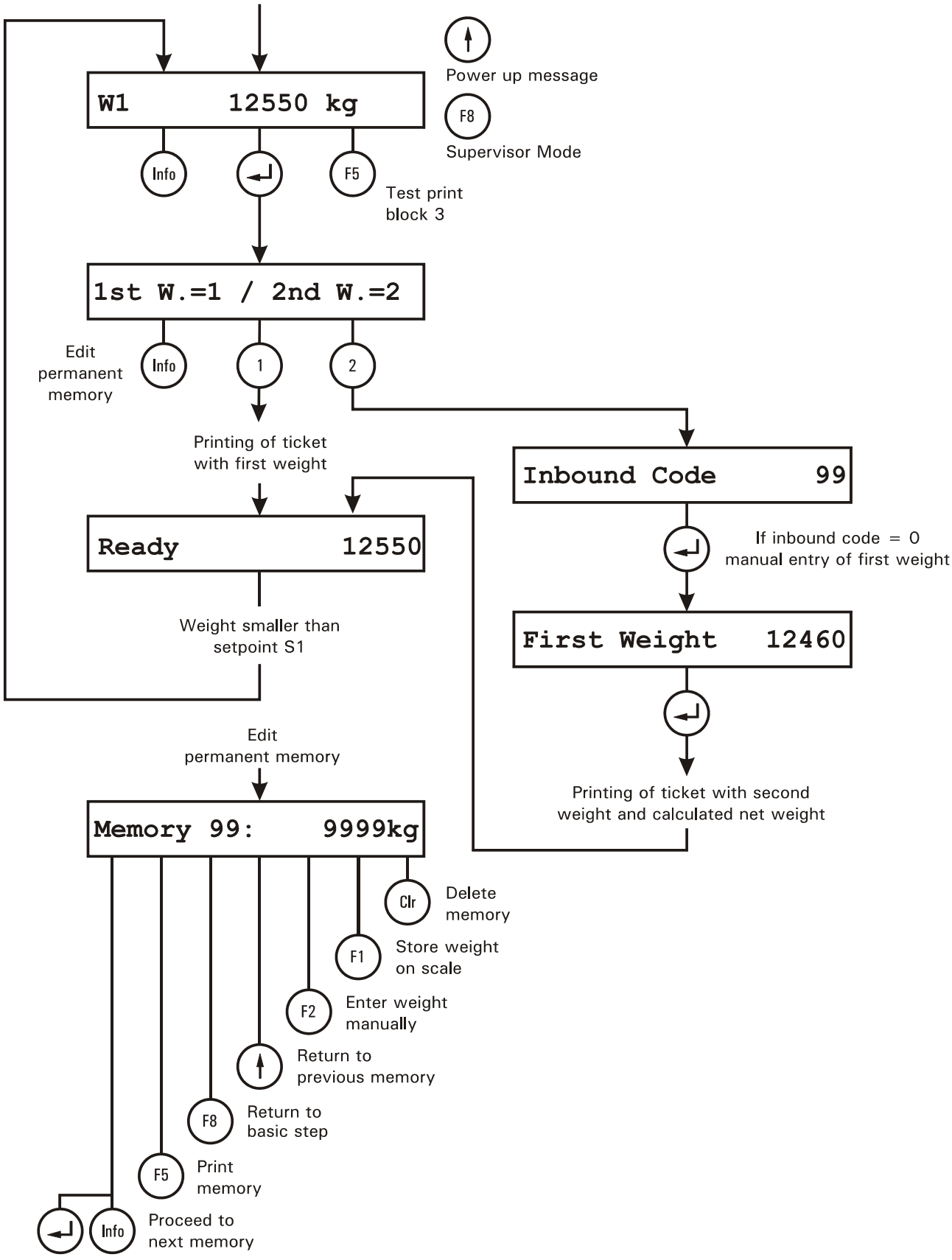
- **F1** Store **Weight On Scale** in permanent memory
- **F2** **Manual Entry** of weight into permanent memory
- **F5** **Print**
- **F8** **Return**
- **Clr** **Delete** contents of permanent memory. **Note:** The contents is deleted immediately.

Note: Weights captured with a first weighing are appended to the permanent memory.

Example: With 8 permanent memories ('No. Fix Storages' = 8) the first storage location for the dynamically allocated first weights is #9.

7.1.4 Principal Structure Of Operating Mode 'TRUCK' With First Weight Printing

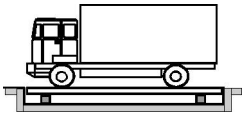
- Ticket printing of first weight
- Ticket printing of second weight and calculated net weight



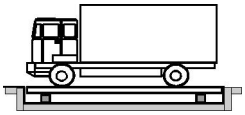
7.2 Weighing Without First Weight Printing

When the Service Mode parameter '1st Weight Ticket = N' is set, the first weight is stored against an inbound code (ID) that can be chosen freely and called up during the second weight cycle with this ID.

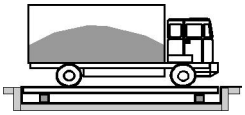
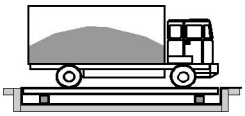
7.2.1 First Weighing

	W1 0.02 t	
	W1 ø 0.00 t	Set scale to zero
	W1 6.50 t	Drive truck onto scale
	1st W.=1 / 2nd W.=2	Press 1 for first weighing
	Inbound Code 12345	Entry of ID to store first weight (e.g. vehicle registration number). **Note:** If a first weight is already stored against this ID, a warning is shown before this value is overwritten.

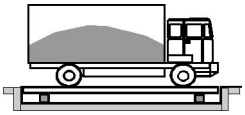
If a corresponding input field is defined

	Veh.Reg.No BM-SY 123	Enter vehicle registration-No.
	P1 6.50 t	Weight is stored against ID 12345.
	Ready 6.50 t	Drive truck off scale

7.2.2 Second Weighing

	W1 0.02 t	
	W1 ⌀ 0.00 t	Set scale to zero
	W1 7.60 t	Drive truck onto scale
	1st W.=1 / 2nd W.=2	Press 2 for second weighing
	Inbound Code 12345	Enter ID of first weighing, e.g. 12345
	First Weight 6.50	Weight is shown for verification

If a corresponding input field is defined

	Veh.Reg.No BM-SY 123	Enter vehicle registration-No.
	P1 7.60 t	Print ticket with first and second weight
	Ready 7.60 t	Drive truck off scale
	W1 ⌀ 0.00 t	Basic step

7.2.3 View / Delete First Weight Memory

View first weights

	W1 0.02 t	Basic step
↵	1st W.=1 / 2nd W.=2	
Info	ID 12345 Wgt 6.50t	Call up first record in first weight memory, ID and weight
↵	ID 11111 Wgt 17.50t	Show next record
↑	ID 12345 Wgt 6.00t	Show previous record

Delete first weights

Info	ID 12345 Wgt 6.00t	Choose record in first weight memory
Clr	Delete...	Delete chosen record **Note**: The record is deleted immediately.

7.2.4 Permanent Memory

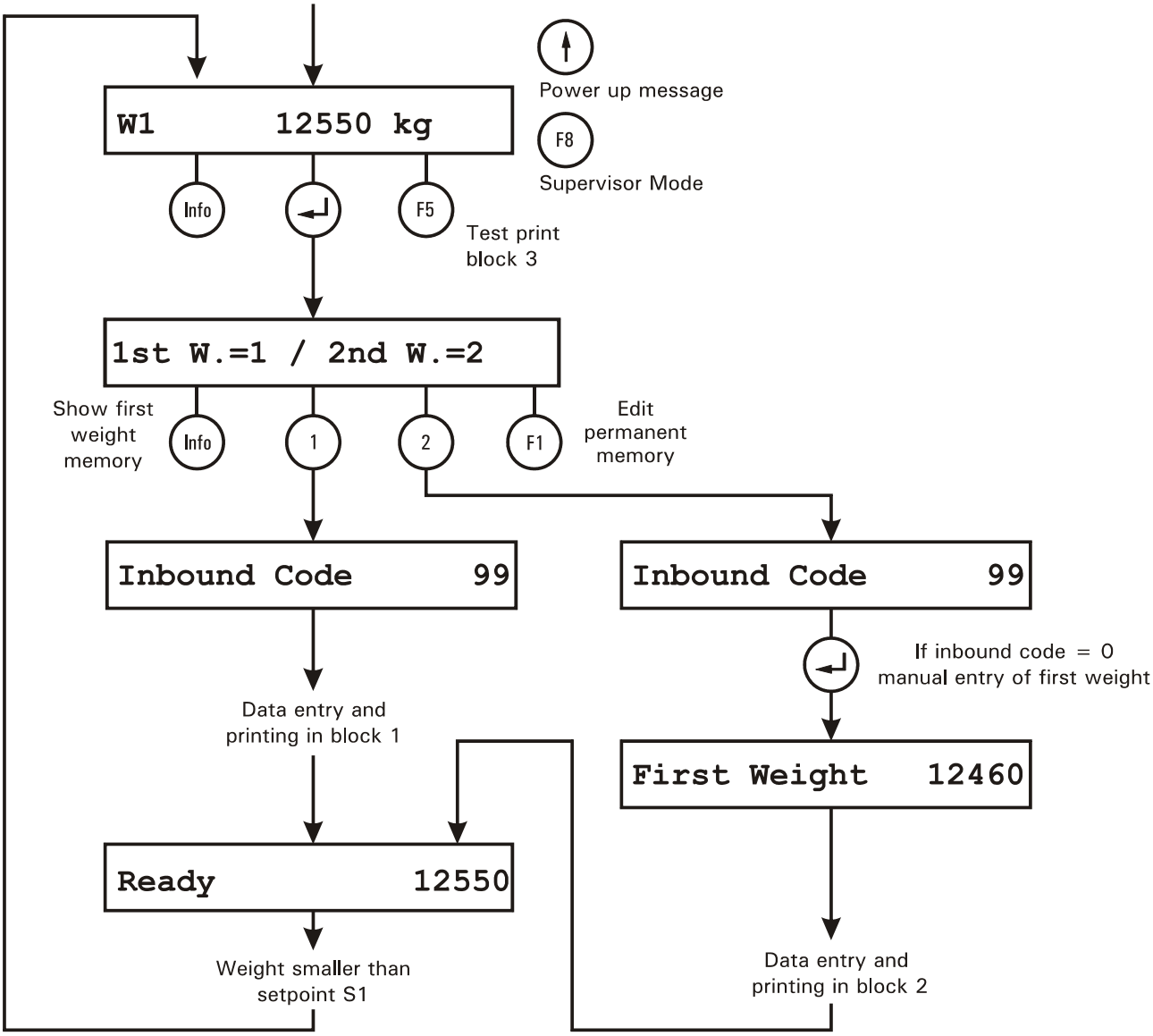
For weighing of trucks with known tare weights, these weights can be captured / edited and stored permanently (99 records max.).

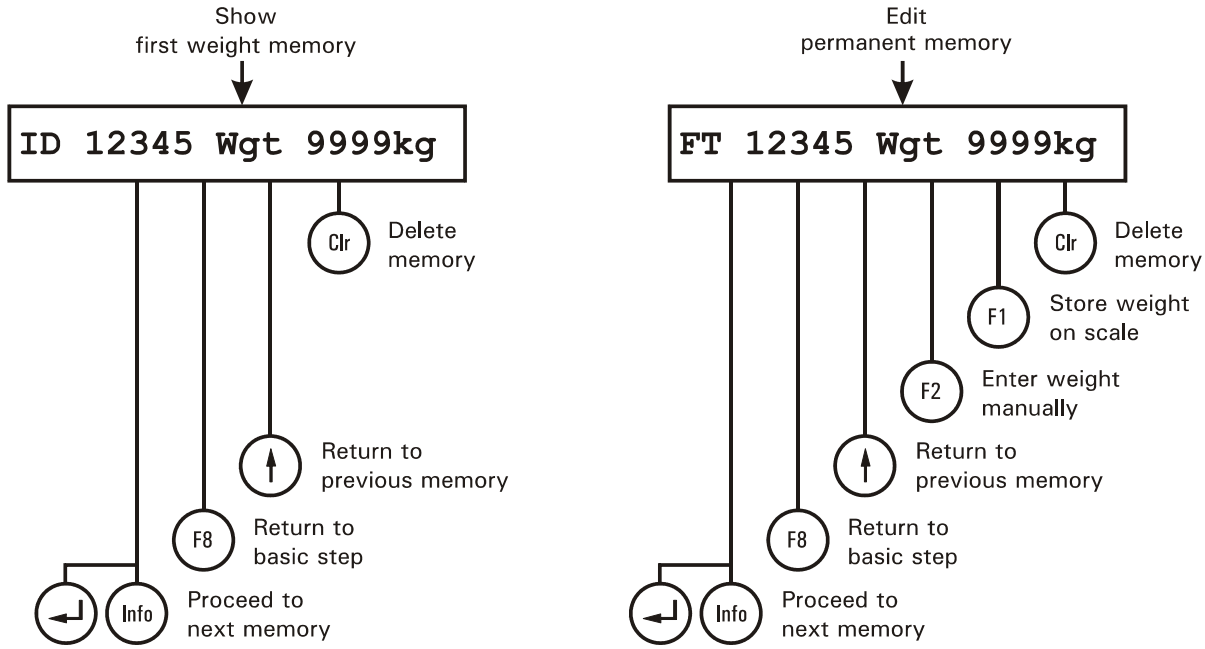
	W1 0.02 t	Basic step
↵	1st W.=1 / 2nd W.=2	
F 1 STU	FT 12345 Wgt 6.50t	Show record in permanent memory
↵	FT 12346 Wgt 2.50t	Show next record
↑	FT 12345 Wgt 6.50t	Show previous record

Functions:

- **F1** Store **Weight On Scale** in chosen memory
- **F2** **Manual Entry** of weight into permanent memory
- **F8** **Return**
- **Clr** **Delete** contents of permanent memory. **Note:** The contents is deleted immediately.

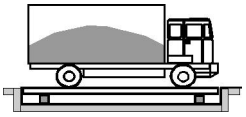
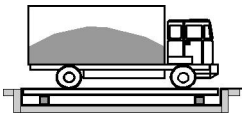
7.2.5 Principal Structure Of Operating Mode 'TRUCK' Without First Weight Printing



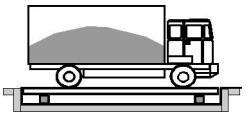


7.3 Single-Pass Weighing With Manual Entry Of First Weight

If the first weight is known (e.g. tare weight of truck), it can be entered manually and only one weighing is required. Weights are not stored.

	W1 0.02 t	
	W1 ø 0.00 t	Set scale to zero
	W1 6.50 t	Drive truck onto scale
	1st W.=1 / 2nd W.=2	Press 2 for second weighing
	Inbound Code _____0	0 for manual entry of first weight
	First Weight 6.50	Manual entry of first weight

If a corresponding input field is defined

	Veh.Reg.No BM-SY 123	Enter vehicle registration-No.
	P1 7.60 t	Print ticket with first and second weight
	Ready 7.60 t	Drive truck off scale
	W1 ø 0.00 t	Basic step

7.4 Parameter Settings / Notes

- After printout of the second weighing the temporary memory for the corresponding first weight is deleted. Weights in the memory for known trucks remain unchanged.
- The number of memories for known trucks depends on the configuration. The assigned codes are 1 - n, e.g. 1 - 5. The remaining memories are those used as temporary memories, e.g. 6 - 99 in this example.
- When memories are deleted manually, in permanent memories only the weight is cleared, whereas in the case of a temporary first weight memory the memory itself is deleted. Thus, the temporary memories are no longer numbered consecutively.
- First and second weight are compared as absolute values, therefore a first weighing can be made with either a loaded or offloaded truck.
- The operating mode TRUCK supports one platform only.
- If a max. permissible truck weight for second weighing was entered, the error message 'Truck too heavy' is shown when this weight is exceeded. Then a weigh ticket cannot be printed.
- 'ID = 0' on the printout and the marking 'kgM' indicate that the first weight was entered and not recalled as measured weight from memory. When the weight of known trucks is recalled from the first weight memory, the ID of this memory is printed, however, the weight is also marked as manual entry 'kgM'.
- In the Supervisor Mode a threshold can be specified with the parameter '1st Setpoint' to control traffic lights.

Traffic lights: The outputs A0 and A1 can be used to control traffic lights:

	A0 = 1	A0 = 0	A1 = 1	A1 =0
Ready for start, weight < S1	Access green			Exit red
Truck on scale, weight > S1		Access red		Exit red
Weighing ready, weight > S1		Access red	Exit green	
Weighing ready, weight < S1	Access green			Exit red

8 Operating Mode 'FILL 1' (Filling)

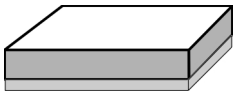
The operating mode 'FILL 1' can be used for a simple two-speed filling operation with fast and slow filling. The target value is entered as input step in the sequence. The two setpoints S1 and S2 are used for the calculation of the fast / slow setpoint (S1) and the preact for the in-flight compensation (S2). These values are subtracted from the target value.

8.1 Enter Setpoints And Target Weight

F and 8 DEF		Press subsequently in the basic step to enter Supervisor Mode.
↵	1st Setpoint 20.0	Press ↵ **-key** repeatedly to proceed to entry of first setpoint (fast / slow switching point), in this example: 100 – 20 = 80.
↵	2nd Setpoint 5.0	Enter second setpoint (cutoff slow). In this example: 100 – 5 = 95.
↵	Saving...	Exit Supervisor Mode.
	W1 ø 0.0 kg	In the initial step of the sequence press ↵ **-key**.
↵	Target 100.0	Enter target weight and confirm with ↵ **-key**.

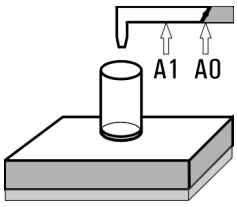
8.2 Filling

FMode = 0 Automatic taring (setting in Supervisor Mode):



Start 0.2 kg

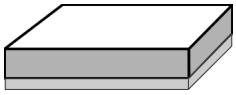
→0← Start 0.0 kg — Set scale to zero.



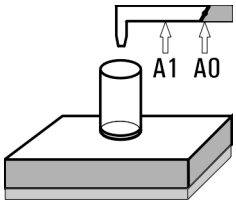
Start 8.2 kg — Place container on scale.

↵ Taring... — Start filling with ↵ **-key** or via external signal E0 (e.g. push button), scale is automatically tared.

FMode = 1 Automatic zero setting (setting in Supervisor Mode):



Start 0.2 kg	

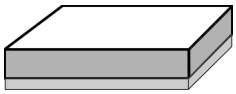


Start 8.2 kg	Put on container

0-Check...	Start filling with ↵ **-key** or via external signal E0 (e.g. push button), scale is automatically set to zero.

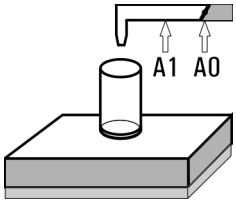
Note: With this setting it is not possible to capture tare weights.

FMode = 2 No automatic taring or zero setting (setting in Supervisor Mode):



Start 0.2 kg	

Start 0.0 kg	Set scale manually to zero

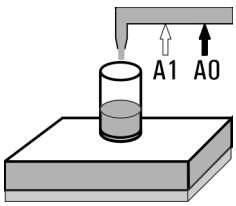


Start 8.2 kg	Put on container

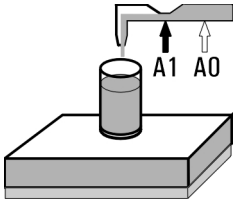
Start 0.0 kg NET	Tare scale manually

Fast 10.2 kg NET	Start filling with ↵ **-key** or via external signal E0 (e.g. push button).

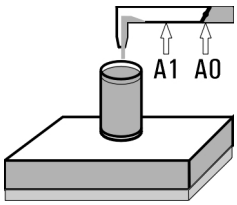
Note: With this setting zero setting and/or taring must be made manually.



Fast 40.2 kg	Feeding device for fast-speed feeding is controlled with output signal A0. Container is filled in fast speed until setpoint SP1 is reached (fast / slow switching point). In this example at: 100—20 = 80kg.



Slow 88.2 kg	Feeding device for slow-speed feeding is controlled with output signal A1. Container is filled in slow speed until setpoint SP2 is reached (cutoff point). In this example at: 100—5 = 95kg.



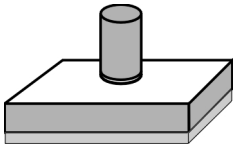
Ready 99.2 kg	After both signals have been switched off, the material that is still in flight between the feeder and the scale flows into the container.

If input fields are defined in header section:

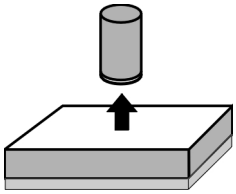
 Article-No. 111	In this example an input field 'Article-No' is defined for printout / data transmission.

If input fields are defined in the cyclic part:

 Operator-No. 222	In this example an input field 'Operator-No' is defined for printout/ data transmission.

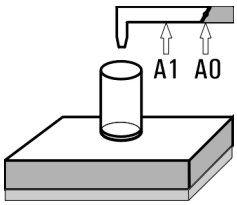


P1 99.2 kg	Printing and/or data transmission.



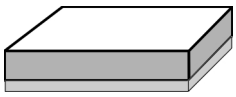
Start -8.0 kg	Remove container from scale.

8.3 Filling Of Further Containers



Start 0.0 kg	Put on container
 Fast 40.2 kg	**Next filling**

8.4 Calculate Totals And Terminate Cycle



Start -8.0 kg	
 Target 100.0	End of filling
 W1 0.2 kg	Return to initial step
 Tot. 3 302.8kg	Totalizing: Show number of fillings and total net weight.

Clear memory or return:

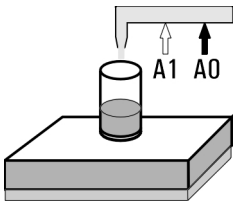
↵	Delete...	Clear totals. Print totals (only if print field is defined in totals section).
or:		
Total	W1 0.2 kg	Return to basic step without clearing totals.

If input fields are defined in the totals part:

↵	Batch-No. 333	In this example an input field 'Batch-No' is defined for printout.

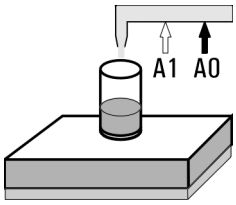
Next batch

8.5 Interrupt Filling



	Fast 40.2 kg	The cycle can be interrupted during fast- or slow-speed filling.
↵	Stop 40.2 kg	Interrupt filling with ↵ **-key** or external signal E1 (e.g. control switch in position On).
↵	Fast 40.2 kg	Continue filling with ↵ **-key** or external signal E1 (e.g. control switch in position Off).

8.6 Abort Filling



	Fast 40.2 kg	The cycle can be aborted during fast- or slow-speed filling.
↵	Stop 40.2 kg	Interrupt filling with ↵ **-key** or external signal E1 (e.g. control switch in position On).
F and 8 DEF	P1 40.2 kg	Press **F8 -key** to abort filling (e.g. ruptured bag or material short), printing and/or data transmission.

Start next filling cycle

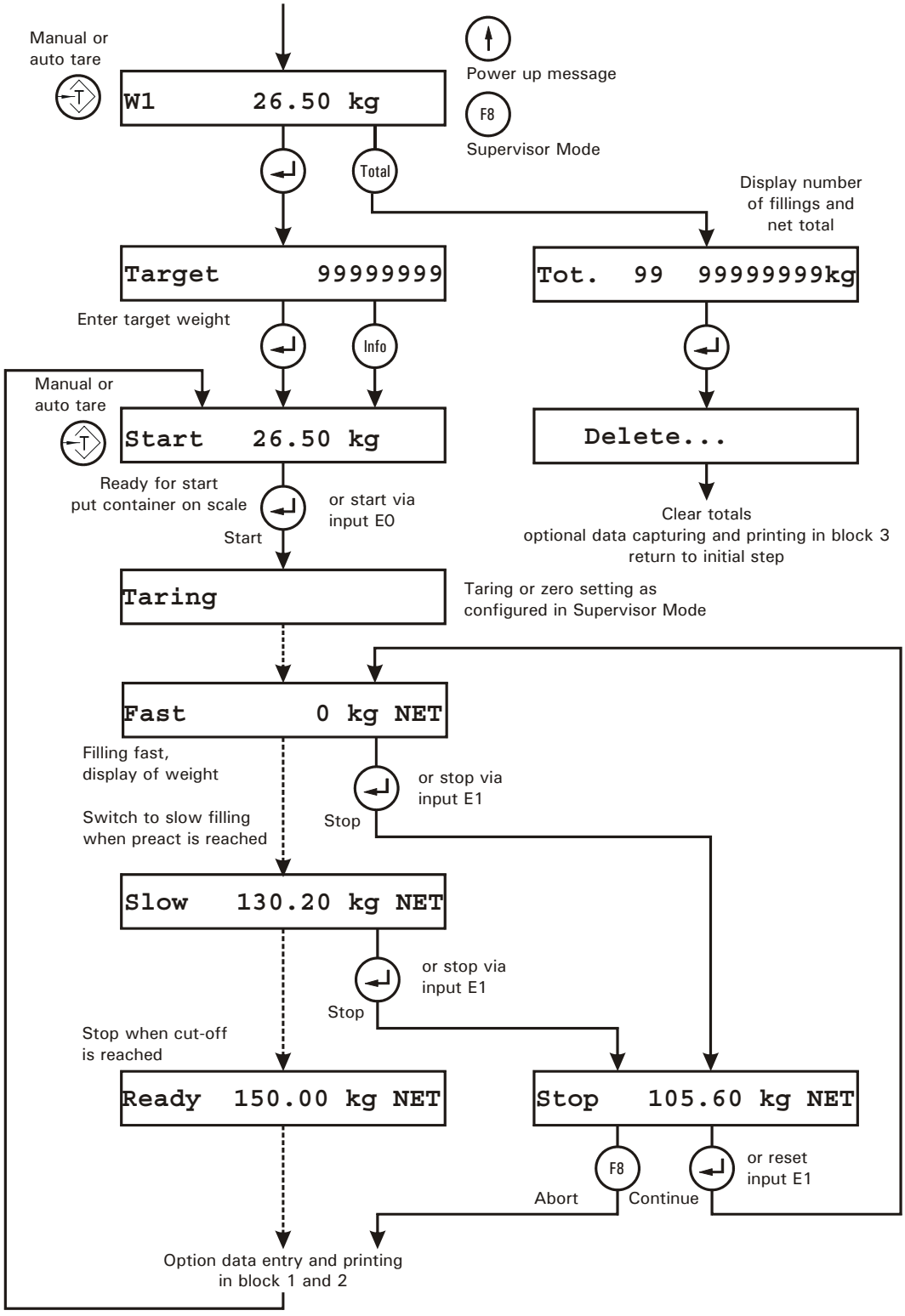
8.6.1 Parameter Settings / Notes

- Several zero setting / taring options can be chosen. For this purpose, an additional step is included in the Supervisor Mode, that is only called up when the operating mode '*FILL*' is selected. Options:
  - **FMode = 0**, Scale is tared prior to every cycle;
  - **FMode = 1**, Scale is set to zero prior to every cycle (only within specified zero setting range, filling is only started if zero setting could be carried out success-fully);
  - **FMode = 2**, Filling is started without auto taring or zero setting (gross filling); manual tare is possible in the start step to enter the tare of not completely emptied or partially filled containers (e.g. gas bottles). For series weighings this tare weight remains stored until it is cleared or changed. Please note: the use of manual tare is not appropriate for the two other filling modes (automatic taring or zero setting).
- Start of filling via keyboard can be disabled by setting the parameter '`Start via Keyb.=N`' in Supervisor Mode.
- Weight and target are compared as absolute (unsigned) values, thus it is possible to fill empty containers or to withdraw material from filled -or partially filled- ones.
- The operating mode 'FILL 1' supports one platform only.

Overview: Setting of setpoints S1 and S2

	Example		Target: 100kg
Setting	S1 (Fast)	S2 (Slow)	Filling
S1 greater S2	20	5	• Up to 80kg fast • Up to 95kg slow • Dribble (in-flight) up to 100kg
S2 equal 0	20	0	• Up to 80kg fast • Up to 100kg slow (dribble is ignored)
S2 greater or equal S1	20	≥ 20	• Up to 80kg fast • Dribble (in-flight) up to 100kg (slow is disabled, filling is only controlled via output A0)

8.6.2 Principal Structure Of Operating Mode 'FILL1'



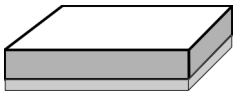
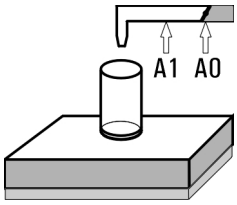
9 Operating Mode 'FILL 2' (Filling)

In contrast to operating mode 'FILL 1' there is an additional product file available in mode 'FILL 2' for the storage of product parameters for max. 9 products and an automatic preact correction.

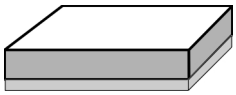
9.1 Filling

	W1 ø 0.0 kg	Press ↵ -**Taste** in the first step of the sequence.
Info	P1 Natr.Ch. 100.0kg	Select product from product file. The display shows the number and the name of the product and the pertaining target weight. See further down below for entry and editing of product data.
↵		Confirm selection and proceed.

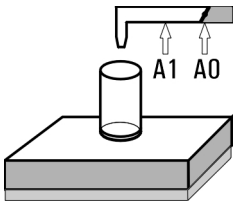
FMode = 0 Automatic taring (setting in Supervisor Mode):

	Start 0.2 kg	When an external relay module is conneced, the output A3 is used to signal 'Ready for start'.
→0←	Start 0.0 kg	Set scale to zero
	Start 8.2 kg	Put container on scale
	Checking Tare...	If the parameter 'Max.Tara' is set in Supervisor Mode, it is checked whether the tare weight is within the limits of 'Max.Tara' and 'Min.Tara'.
↵	Taring...	Start filling with ↵ -**key** or via external signal E0 (e.g. push button), scale is automatically tared.

FMode = 1 Automatic zero setting (setting in Supervisor Mode):



```
Start      0.2 kg
```




```
Start      8.2 kg
```

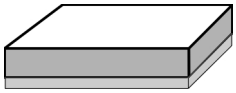
Put container on scale.

```
    0-Check...
```

Start filling with ↵ **-key** or via external signal E0 (e.g. push button), scale is automatically set to zero.

Note: With this setting it is not possible to capture tare weights.

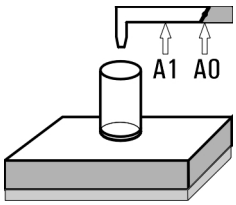
FMode = 2 No automatic taring or zero setting (setting in Supervisor Mode):



```
Start      0.2 kg
```

```
Start      0.0 kg
```

Set scale to zero.




```
Start      8.2 kg
```

Put container on scale.

```
Start      0.0 kg NET
```

Waage tarieren

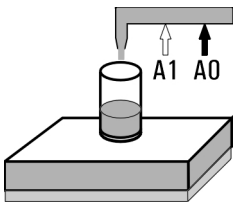
```
 Checking Tare...
```

If the parameter 'Max.Tara' is set in Supervisor Mode, it is checked whether the tare weight is within the limits of 'Max.Tara' and 'Min.Tara'.

```
Fast      10.2 kg NET
```

Start filling with ↵ **-key** or via external signal E0 (e.g. push button).

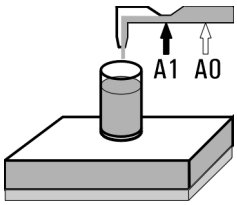
Note: With this setting zero setting and/or taring must be made manually.




```
Fast      40.2 kg
```

Feeding device for fast-speed feeding is controlled with output signal A0. Container is filled in fast speed until preact fast (fast / slow switching point) is reached.
In this example at: 100 − 20 = 80kg.

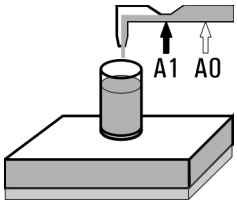
Cutoff point is specified with parameter 'Preact Fast' in product file.




```
Slow      88.2 kg
```

Feeding device for slow-speed feeding is controlled with output signal A1. Container is filled in slow speed until cutoff point is reached. In this example at: 100−5=95kg.

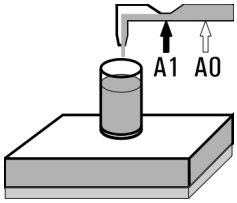
Cutoff point is specified with parameter 'Preact Slow' in product file.




```
Check     88.2 kg
```

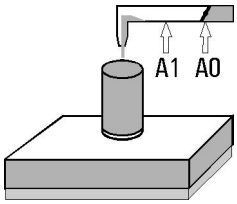
Tolerance is checked after settling time has elapsed. The duration of the settling time is specified with parameter 'Settle Time' in product file.

Minus tolerance detected and jogging enabled:




```
Jog       88.2 kg
```

If minus tolerance is detected, pulse-wise jogging is started in slow speed to approximate the target weight. The duration of a pulse is specified with parameter 'Jog. Time' in the product file. If jog time is set to zero, jogging is disabled.




```
Jog       98.2 kg
```

Pulse-wise jogging is continued until weight is within tolerance band as specified in product file with parameters '+Tol.' and '-Tol.'.

If input fields are defined in header section:

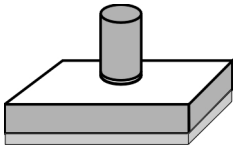
```
Article-No.      111
```

In this example an input field 'Article-No' is defined for printout/ data transmission.

If input fields are defined in the cyclic part:

```
Operator-No.     222
```

In this example an input field 'Operator-No' is defined for printout/ data transmission.



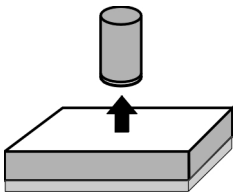
```
P1        100.0 kg
```

Printing and/or data transmission.

```
Ready     100.0 kg
```

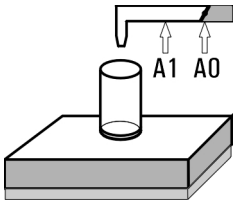
Filling cycle is complete.

If the parameter '0-Range' is set to zero in the Supervisor Mode, press Enter-key in this step of the sequence to continue.



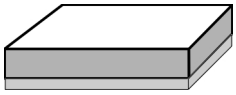
Start -8.0 kg	Remove container from scale.

9.2 Filling Of Further Containers



Start 0.0 kg	Put container on scale.
↵ Fast 40.2 kg	**Next filling**

9.3 Calculate Totals And Terminate Cycle



Start -8.0 kg	
↑ P1 Natr.Ch. 100.0kg	Terminate filling cycle.
↑ W1 0.2 kg	Return to basic step.
Total Tot. 3 302.8kg	Totalizing: Show number of fillings and total net weight.

Clear memory or return:

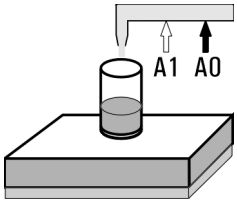
↵ Delete...	Clear totals. Print totals (only if print field is defined in totals section).
or:	
Total W1 0.2 kg	Return to basic step without clearing totals.

If input fields are defined in the totals part:

↵ Batch-No. 333	In this example an input field 'Batch-No' is defined for printout.

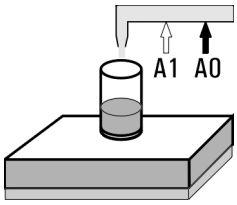
Next batch

9.4 Interrupt Filling or interrupt preact correction



	Fast 40.2 kg	The cycle can be interrupted during fast- or slow-speed filling or interrupt preact correction.
↵	Stop 40.2 kg	Interrupt filling with ↵ **-key** or external signal E1 (e.g. control switch in position On).
↵	Fast 40.2 kg	Continue filling with ↵ **-key** or external signal E1 (e.g. control switch in position Off).

9.5 Abort Filling or abort preact correction



	Fast 40.2 kg	The cycle can be aborted during fast- or slow-speed filling or interrupt preact correction.
↵	Stop 40.2 kg	Interrupt filling with ↵ **-key** or external signal E1 (e.g. control switch in position On).
F and 8 DEF	P1 40.2 kg	Press **F8 -key** to abort filling (e.g. ruptured bag or material short), printing and/or data transmission.

During fast and slow filling 'Abort filling completely' works the same way as during jog feeding.

9.6 Enter / Edit Product Data

	W1 0.2 kg	
F and 1 STU	P1 Natr.Ch. 100.0kg	Press **F1**-key to call up product file.
Info	P1 Natr.Ch. 100.0kg	Press **Info**-key to select product. The display shows number, product name and target weight.
↵	P1 Name Natr.Ch.	Enter product name (8 characters max).
↵	P1 Target 100.0	Enter target weight.
↵	P1 Pre.Fast 20.0	Enter preact fast for fast/slow-speed switching point.
	P1 Pre.Slow 5.0	Enter preact slow for cutoff slow-speed.
↵	P1 Settle Time 0.50	Enter settling time in sec that must elapse before tolerance check is carried out.
	P1 + Tol. 1.0	Enter permissible plus tolerance.
	P1 - Tol. 1.0	Enter permissible minus tolerance.
	P1 Jog Time[s] 0.10	Enter duration of jog pulse for adding material if weight is short of target weight by more than the tolerance amount. Jogging and recheck of tolerance is continued until the weight is within the tolerance band. Enter 0 to disable jog function. Continue with next product.
F and 8 DEF	P1 Natr.Ch. 100.0kg	Exit product file.

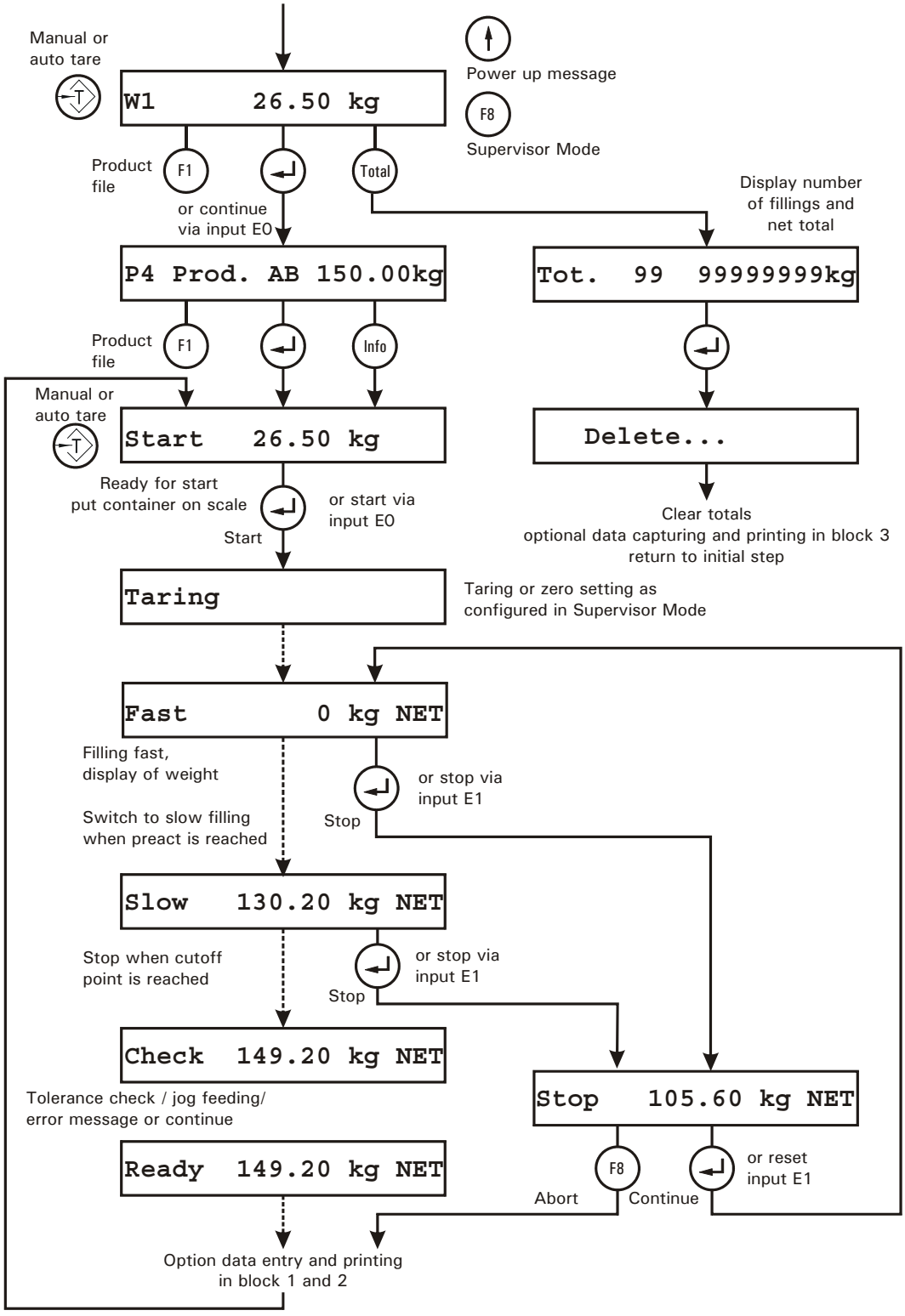
9.6.1 Parameter Settings / Notes

- Several zero setting / taring options can be chosen. For this purpose, an additional step is included in the Supervisor Mode, that is only called up when the operating mode '*FILL*' is selected. Options:
  - **FMode = 0**, Scale is tared prior to every cycle;
  - **FMode = 1**, Scale is set to zero prior to every cycle (only within specified zero setting range, filling is only started if zero setting could be carried out success-fully);
  - **FMode = 2**, Filling is started without auto taring or zero setting (gross filling); manual tare is possible in the start step to enter the tare of not completely emptied or partially filled containers (e.g. gas bottles). For series weighings this tare weight remains stored until it is cleared or changed. Please note: the use of manual tare is not appropriate for the two other filling modes (automatic taring or zero setting).
- Start of filling via keyboard can be disabled by setting the parameter '`Start via Keyb.=N`' in Supervisor Mode.
- Weight and target are compared as absolute (unsigned) values, thus it is possible to fill empty containers or to withdraw material from filled -or partially filled- ones.
- The operating mode 'FILL 2' supports one platform only.
- **Preact correction:** If the automatic trend-sensing preact correction is enabled in Supervisor Mode, the value for preact slow (=cutoff point slow-speed feeding) is recalculated with every completed filling cycle and updated in the product file. The operator may manually change this value. e.g. to shorten -after change of material- the learning curve that the controller needs to again reach target (usually within 4 filling cycles).
- **Tare check:** Prior to the start of a filling cycle a tare check can be carried out, i.e. filling is only released when the tare weight is greater than min. tare and smaller than max. tare. If this is not the case, an error message ('Tare not ok!') is displayed which must be acknowledged by the operator by pressing the ↵-key. After rectifying the cause of the problem, a new start signal must be set. If no value is entered for max. tare, the tare check is disabled, e.g. for extraction of material from a filled hopper.
- If the parameter 'O-Range' is set to '0' in the Supervisor Mode (zero check disabled), the Enter-key must be pressed after a filling is complete. In this case it is recommended to also select filling mode 2, since otherwise automatic taring or zero setting is active.
- If the parameter 'Max.Tare' is set in Supervisor Mode, a tare check is performed to make sure that tare weight is within the limits specified with 'Max.Tare' und 'Min.Tare'.
- If an external relay module is connected, two additional outputs are available in operating mode 'FILL2':
  - Output A2 signals a completed filling cycle. The container can then be removed from the scale.
  - Output A3 signals 'Ready for start'. Start can then be released via Enter-key or input signal E0.

Overview: Setting of setpoints S1 and S2

	Example		Target: 100kg
Setting	S1 (Fast)	S2 (Slow)	Filling
S1 greater S2	20	5	• Up to 80kg fast • Up to 95kg slow • Dribble (in-flight) up to 100kg
S2 equal 0	20	0	• Up to 80kg fast • Up to 100kg slow (dribble is ignored)
S2 greater or equal S1	20	≥ 20	• Up to 80kg fast • Dribble (in-flight) up to 100kg (slow is disabled, filling is only controlled via output A0)

9.6.2 Principal Structure Of Operating Mode 'FILL2'



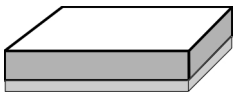
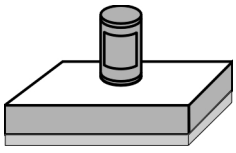
10 Operating Mode 'CHECK' (Checkweighing)

In the operating mode 'CHECK' the weighing terminal works as a plus/minus checkweigher, classifying the weight of a test object in 3 zones (plus / ok / minus). The minus threshold is defined as target weight minus value of setpoint S1, while the plus threshold is defined as target weight plus value of setpoint S2.

10.1 Enter Tolerances And Target Weight

F and 8 DEF		Press subsequently in the initial step to enter Supervisor Mode.
↵	1st Setpoint 5.0	Press ↵ **-key** repeatedly to proceed to entry of first setpoint (minus tolerance)
↵	2nd Setpoint 10.0	Proceed to entry of second setpoint (plus tolerance)
↵	Saving...	Exit Supervisor Mode.
	W1 ø 0.0kg	In the initial step of the sequence press ↵ **-key**.
↵	Target 50.0	Enter target weight and confirm with ↵ **-key**.

10.2 Checkweighing

	ø 0.2kg	
→0←	ø 0.0kg	Set scale to zero
	ok 55.2 kg	Put test object on scale; check and display of check result: weight is within tolerance band (ok), in this example between 45kg and 60kg.

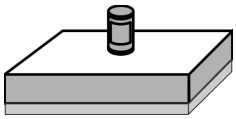
If input fields are defined in header section:

↵	Article-No. 111	In this example an input field 'Article-No' is defined for printout / data transmission.

If input fields are defined in the cyclic part:

↵	Operator-No. 222	In this example an input field 'Operator-No' is defined for printout / data transmission.
↵	ok 55.2 kg	Release printing / data transmission

10.2.1 Weight Too Small (Minus)

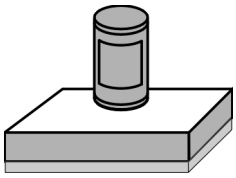


	Minus 37.2 kg	Put next test object on scale; check and display of check result: weight is too small, (in this example below 45kg).

If input fields are defined in the cyclic part:

↵	Operator-No. 222	In this example an input field 'Operator-No' is defined for printout / data transmission.
↵	Minus 37.2 kg	Release printing / data transmission

10.2.2 Weight Too Big (Plus)

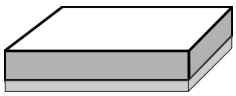


	Plus 70.4 kg	Put next test object on scale; check and display of check result: weight is too big, (in this example above 60kg).

If input fields are defined in the cyclic part:

↵	Operator-No. 222	In this example an input field 'Operator-No' is defined for printout / data transmission.
↵	Plus 70.4 kg	Release printing / data transmission

10.3 Calculate Totals And Terminate Cycle



	⌀ 0.0kg	
↑	Target 50.0	Abort checkweighing
↑	W1 ⌀ 0.0kg	Return to initial step
Total	Tot. 3 162.8kg	Totalizing: Show number of checks and total net weight.

Clear memory or return:

↵	Delete...	Clear totals. Print totals (only if print field is defined in totals section).
or:		
Total	Plus 70.4 kg	Return to basic step without clearing totals.

If input fields are defined in the totals part:

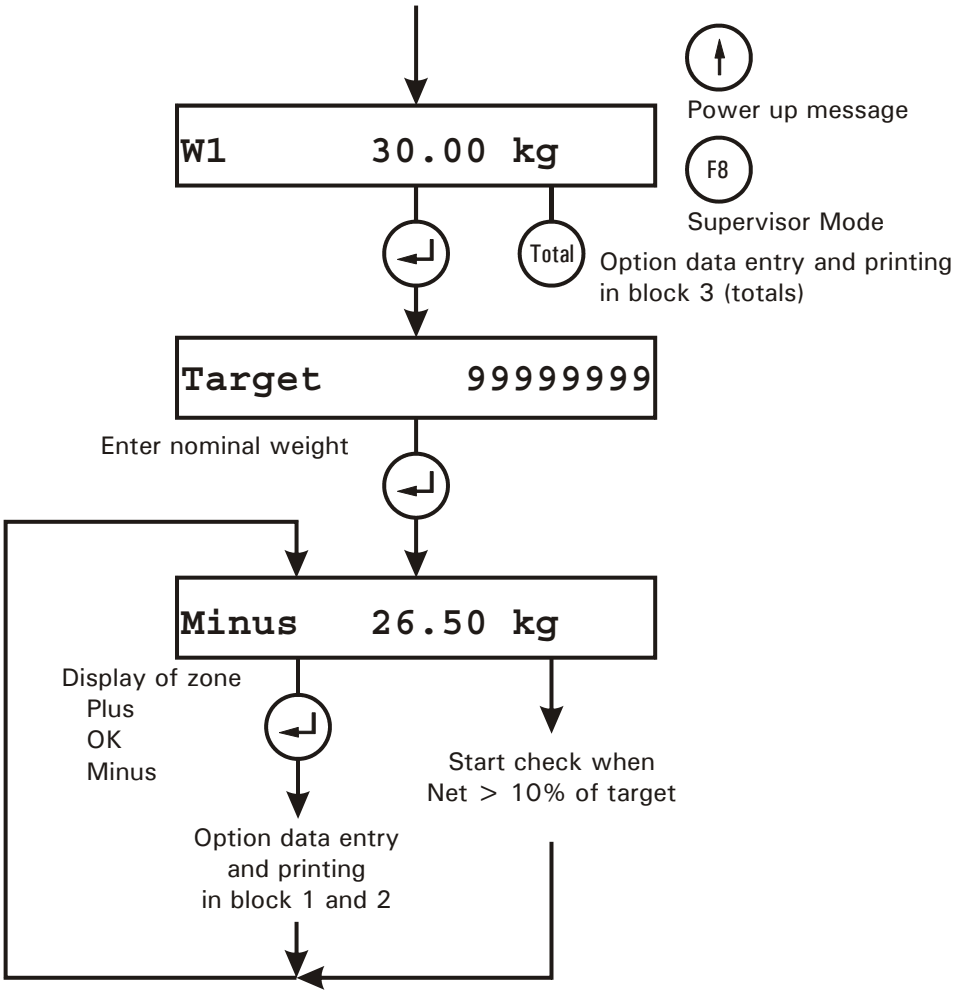
↵	Batch-No. 333	In this example an input field 'Batch-No' is defined for printout.

Next cycle

10.3.1 Parameter Settings / Notes

- The operating mode 'CHECK' supports one scale only.
- Press **Info**-key to show current tare weight, e.g. ' 8.0kg TAR'.
- Depending on parameter 'Taremode:Gross/Net' the function of the tare key changes:
  - **Gross/Net** with each actuation of the tare key the display changes from gross to net and back;
  - **Auto Clear** the tare is automatically cleared when the scale returns to the zero range;
  - **Net = 0** every time the tare key is pressed, the scale is tared anew, when the weight returns to the zero range, the tare is cleared and the display is set to gross mode.

10.3.2 Principal Structure Of Operating Mode 'CHECK'



11 Operating Mode 'ONLINE' (Remote Control From PC)

In the operating mode 'ONLINE' the weighing terminal works under remote control from a PC over the optional serial interface.

Operating mode 'ONLINE' is indicated by the symbol O1.

O1 0.0 kg		Basic step

Notes:

- The **Tare** -key can be enabled / disabled in the configuration. Contact your supplier for details.
- Press the keys **F** and **1** or **F** and **2** to switch from one scale to the other.

12 Combined Operating Mode 'TRUCK/ONLINE'

The operating mode 'TRUCK/ONLINE' combines the remote control functions of the 'ONLINE' mode with a truck weighing program for emergency operation when the PC or the communication is down. For this reason the data transmission options in the 'TRUCK' part are disabled. The operating mode 'TRUCK' is called up with the F8-key.

The initial step of the operating mode 'ONLINE' is indicated with the symbol O1:

O1 0.0 kg		Basic step

Notes:

- The **Tare**-key can be enabled / disabled in the configuration. Contact your supplier for details.
- The emergency mode 'TRUCK' is called up with the **F8**-key.
- Press **Up**-key to return from the emergency program to the 'ONLINE' mode.
- The operating mode TRUCK/ONLINE supports one platform only.

13 Combined Operating Mode 'BASIC/COUNT'

The operating mode 'BASIC/COUNT' combines the two operating modes 'BASIC' and 'COUNT' and is intended for mobile weighing at changing locations (e.g. goods in and warehouse). In 'BASIC' mode weights and IDs can be captured and printed, whereas 'COUNT' permits the counting of parts for shipping and receiving.

After power up, the mode is active that was selected when the terminal was switched off, switching to the other mode and back is made with the function key F6.

	W1 0.0 kg	Basic step
F and 6 PQR	Application: Basic	Switch operating mode from COUNT to BASIC.
	W1 0.0 kg	Basic step
F and 6 PQR	Application: Count	Switch operating mode from BASIC to COUNT.

Notes:

- Data transmission is always disabled;
- When the terminal is switched from one operating mode to the other, the totals are cleared;
- Press the keys **F** and **1** or **F** and **2** to switch from one scale to the other.

14 Data Archive

The W&M approved data archive has a capacity of approx. 100,000 records. A record is stored for every completed weighing cycle. The sequence of a weighing transaction is: operating / data entry, entry in data archive, printing and data transmission.

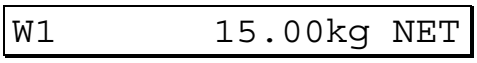
In the archive each record is stored with date, ident-No. and gross and net weight. The Id-No. is reset to 0001 with every change of the date. To allow for a later verification of the weighing data, date and identification-No. of the weighing have to appear on the printout or must be stored together with the weight on the host computer.

The data archive can be used as an alternative to a log printer when data are processed in an EDP system. The stored weights are read-only and cannot be deleted or changed.

The data archive is supported by all operating modes except COUNT and BASIC/COUNT.

14.1 View Stored Records

From the basic step of the weight display the Supervisor Mode is called up by pressing F8.

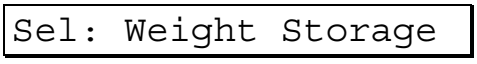


Basic step

F8 Call up Supervisor Mode

Password specified for Supervisor Mode:

Enter password for Supervisor Mode

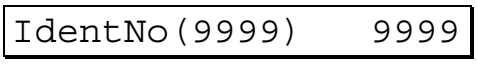


Info

Enter date of weighing

Info Show data archive info (see below)

F5 Print stored weights (see below)



The number of records stored under this date is shown (9999).

Enter ident-No. of record that is to be looked up.

Display of net and tare weight.

PT = Preset Tare; TA = Autotare.

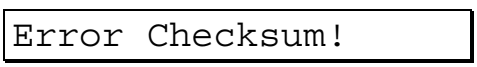
↑ Return to previous step.

F5 Print record.

↵ Return to step '`Search Date`'.

A matching record could no be found in the data archive:

Checksum error detected:



An error was detected in the checksum of the data archive. Important note: The stored data are void!

14.2 Show Data Archive Info

`Search Date 99.99.99`		
	Info	Show info on data archive.
`Capacity 999999`		Show capacity (number of weighing transactions that can be stored).
	Info or ↵	Return to step '`Search Date`'

14.2.1 Print Stored Weights

`Search Date 99.99.99`	**F5**	Print stored weights
`From Date 99.99.99`		Enter start date of records to be printed
`To Date 99.99.99`		Enter end date of records to be printed
`Printing...`		Print records within selected period
		Return to step '`Search Date`'

15 Error Report

In the error report (event log) the events: power on, overload and return from overload are recorded together with date and time. When the group 'Error Report' is called up, the most recent event is shown first, use ↵-key to view older records or ↑-key to return to more recent entries.

The error report is read-only, its contents cannot be changed or deleted. It can also be viewed via the web browser. The capacity is sufficient for approx. 600 entries, when the memory is full, the oldest entries are overwritten.

From the basic step of the weight display the Supervisor Mode is called up by pressing F8.

W1 15.00kg NET		Basic step
	F8	Call up Supervisor Mode

Password specified for Supervisor Mode:

Password ????	Enter password for Supervisor Mode

Sel: Error Report	**Info**

Example Power On:

30.08.04 10:30 PowOn

Example Overload:

30.08.04 11:50 Over

Example Return From Overload:

30.08.04 11:55 ok

↵	Continue with older entry
↑	Return to more recent entry, or return to step 'Error Report'

16 Transport, Maintenance And Cleaning

16.1 Transport

Notes:

- Transport and storage of electronic components such as boards, EPROMS, etc. must only be made in suitable anti-static ESD bags or cases.
- Storage temperature –25 to +70°C at 95% max. relative humidity without condensation.

16.2 Maintenance

CAUTION

- This unit and its associated equipment must be maintained by qualified personnel only, who are familiar with the construction and operation of all equipment in the system and the potential hazards involved. Failure to observe these precautions could result in bodily injury!

  Disconnect all power to this unit before servicing!

The IT3000A terminal is designed to require a minimum of maintenance and service, however, depending on the environmental conditions a visual inspection at regular intervals is recommended. The frequency at which normal maintenance (cleaning and inspection) should be performed, when installed in a clean office environment, should be twice a year. However, if the unit is subject to a dusty or dirty environment the frequency should be increased as required. At these inspections it should be made sure that all connected cables are undamaged and that all connectors are tightly fastened.

Maintenance of scale platforms is required at regular intervals depending on use and environment. The accuracy of scales can be affected by dirt, foreign objects, etc. and appropriate maintenance is strongly recommended. Also recommended is the calibration with certified test weights at regular intervals.

16.3 Cleaning

CAUTION

- **Disconnect all power to this unit before servicing!**

Clean the keyboard and covers with a soft clean cloth that has been dampened with a mild window type cleaner. Do **NOT** use any type of industrial solvent or the finish of the unit may be damaged. Do not spray cleaner directly on the unit.

17 Trouble Shooting

CAUTION

- **This unit does not contain any customer servicable parts!**

  Only permit qualified personnel to service this equipment. Exercise care when making checks, tests, and adjustments!

If any problem arises that has not been explained above, please follow this check list:

- Power supply on and line cord undamaged (visual inspection)?
- All cables connecting to scales and peripheral devices undamaged (visual inspection)?
- Connectors fitted correctly and tightly secured at peripheral devices (visual inspection)?

If operational difficulties are encountered that cannot be rectified by means of this manual, obtain as much information as possible regarding the particular trouble, as this may eliminate a lengthy, detailed checkout procedure.

If possible, try first to determine the conditions under which the problem occurs. Try to find out whether the appearance of the difficulties can be reproduced under the same conditions.

For the systematic analysis of an unknown problem the information as listed below is required:

- Serial-No. of the unit and its peripheral components
- Program version as displayed on power up
- Exact wording of any error message displayed
- Type and model of peripheral devices related to the problem (e.g. scale, printer, etc.)

To obtain professional assistance contact your service station stating the information listed above.

CAUTION

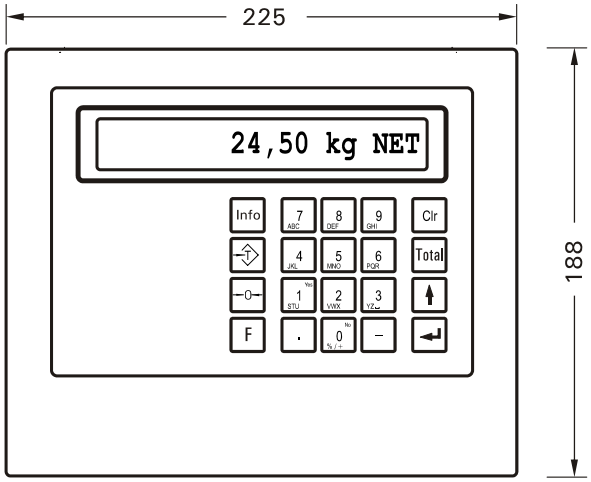
- **It is suggested that assistance from trained service personnel be requested in the event a problem should arise that is beyond the scope of this instruction manual.**

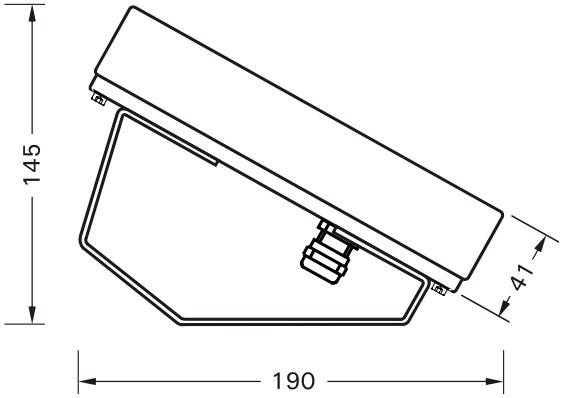
17.1 Error Messages

Error Message	Possible Cause	Corrective Measure
W1 --------	• Scale in overload • CPU does not receive data from weighing interface	• Unload scale • Check internal and external wiring and cabling
Power Up Zero Over	• Error power up zero. This message appears on power up if the weight on the scale exceeds the power up zero range as set in the calibration (+2%,+10%).	• Unload scale
Power Up Zero Under	• Weight below power up zero range. This message appears on power up if the weight on the scale is below the power up zero range as set in the calibration (–2%, –10%).	• Apply dead load
Motion	• This message appears on power up if the scale is in motion and a stable weight reading cannot be obtained within the power up zero range as set in the calibration (±2%, ±10%).	• Settle scale
P1 8520 kg	Program stops in the step 'Printing', because:	
	• Printer not ready	• Switch printer on
	• Paper out	• Provide paper
	• RTS/CTS enabled and no reply from printer	• Rectify cause of the problem, if not possible switch terminal off and on again and disable printer in Supervisor Mode

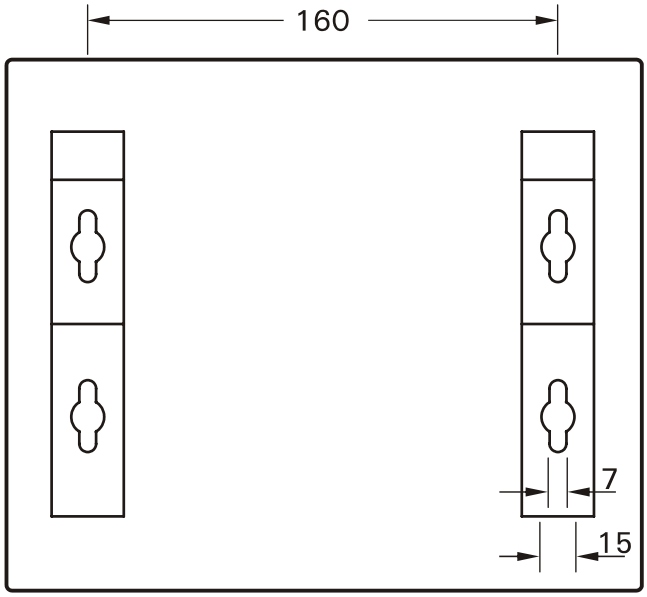
Error Message	Possible Cause	Corrective Measure
Error Transmission	• Host switched off or off-line, data cable not connected or damaged	• Switch on host and start communication program • Check cable and connectors • Press ↵ -key to repeat transmission • Press ↑ -key to abort transmission for this cycle • If problem cannot be rectified, disable data transmission in Supervisor Mode
ADC Over	A/D converter overrange:	
	• Wiring error loadcell	• Check wiring
	• Loadcell defective	• Check loadcell
	• Scale heavily overloaded	• Unload scale
Load Factory Scale 1	• Error A/D converter (loss of factory calibration scale 1)	• Call service
Load Factory Scale 2	• Error A/D converter (loss of factory calibration scale 2)	• Call service
Load Serv.Para	• Calibration data lost	• Call service
Load Cal Par Scale 1	• Calibration data lost	• Call service
Error Ref.-Scale	• Reference scale not operational	• Check cable and connectors
/	• Permissible inclination exceeded (only for movable scales with incline sensor)	• Return platform to level position

18 Dimensions

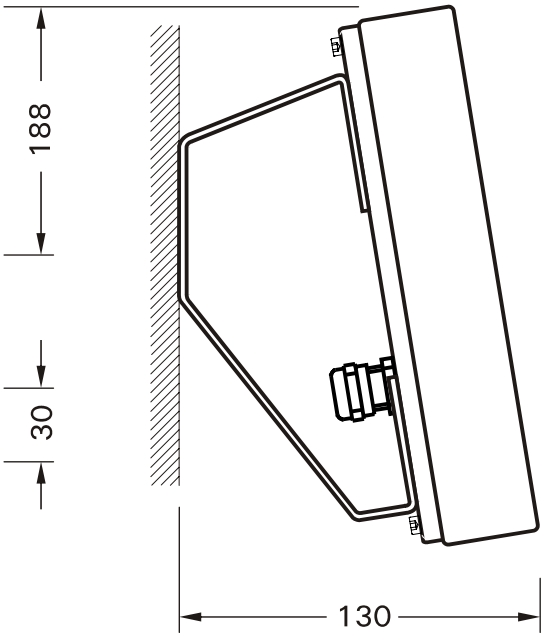




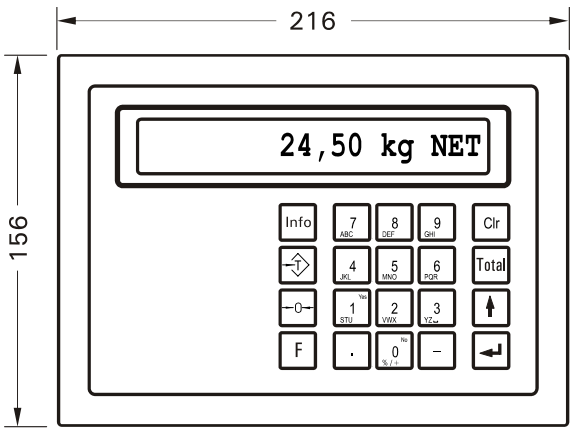
Mounting holes



Wall-mount installation



Panel-mount installation



Cutout in panel